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A Theory of Byzantine Music

by

Viorel Gheorghe

A Dissertation Presented to the
FACULTY OF THE GRADUATE SCHOOL
UNIVERSITY OF SOUTHERN CALIFORNIA
In Partial Fulfillment of the
Requirements for the Degree
DOCTOR OF PHILOSOPHY
(Music Theory)

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Dissertation Abstract Submittal Form

Viorel Gheorghe	**Dr. Robert Moore**
Student's name	Committee Chair's Name

A Theory of Byzantine Music

From the end of the nineteenth century until recently, several western musicologists and theorists have conducted research in Byzantine music. The emphasis of their studies was on various musicological aspects of this tradition from its beginnings in 330 AD until 1821 when a major set of reforms took place. Unlike these previous works, this study attempts to develop a systematic theory of Byzantine music with a special interest in the contemporary practice, which is identified in this study as the Neo-Byzantine period (from 1821 until the present).

There are four general characteristics of Byzantine music which over the centuries have assured the unity of its various forms: 1) the sacred character, 2) the vocal character, 3) the monodic character, and 3) the modal character.

The 8 modal scales used in Byzantine music are different in their structural organization from the ancient Greek modes and also the western ecclesiastical modes. A study of intervals reveals that Byzantine chant uses an untempered tuning system.

Rhythm and meter are essentially connected to the vocal character of this musical tradition giving priority to the meaning of the liturgical text and following the accents of the prosodic feet.

There are four idioms of Byzantine chant: 1) Recitative, 2) Hirmologic, 3) Sticheraric, and 4) Papadike. Each of these idioms represents different degrees of melismatic melodies, different ambitus and different tempos.

Byzantine musical notation developed total differently than the notation of the western music, and it is based on several groups of neumes, which are added above the text. From the four notational systems used in different historical-stylistic periods, this dissertation presents in detail Neo-Byzantine notation, known historically as Chrysantean notation.

A detailed discussion of each of the 8 modes with their various theoretical concepts is accompanied in this work by an examination of over 80 Byzantine chants.

Robert S. Moore
Committee Chair's Signature

4/20/95
Date

INTRODUCTION

At the end of the nineteenth century, several European musicologists and music theorists began to manifest interest in the music of non-western civilizations. Among these non-western music traditions, Byzantine music has been the object of special interest because it is the principal music of neighboring Eastern Europe, whose religious and artistic history has formed an important and continuous interaction with that of western Europe. However, because four centuries of isolation were caused by the Turkish occupation, a totally different music notation system developed. Byzantine music, therefore, appeared to be a totally different musical art to the musicologists and music theorists of the late nineteenth and early twentieth centuries, who were challenged to discover its secrets. For their research these scholars did not have to travel far because collections of the manuscripts of Byzantine music were available for research right in the heart of Europe in such cities as Vienna, Paris, Copenhagen, Rome. Studies of Byzantine music were published by authors like Bourgault-Ducudray, O. Fleischer, J. B. Rebours, G. B. Thibaut, H. Riemann, H. Geisser, C. Höeg, H. J. W. Tillyard, O. Strunk, M. Velimirovic, and primarily E. Wellesz who is responsible for the main body of literature on Byzantine music in the English language. Between 1919 and 1966, Wellesz published several books on Byzantine music, works which represent a reliable synthesis of the state of research and discoveries that were made over the period of approximately one hundred years (1865-1965).

For several reasons, which include a limited access to Byzantine manuscripts, as well as language problems, in his research Wellesz excluded three issues from the study of Byzantine music.

1. In his work *A History of Byzantine Music and Hymnography*, second edition published in 1961, Wellesz stated that the focus of his study was the period beginning with the inauguration of Constantinople in 330 AD to 1821 when a reformed notation system was introduced by Chrysantos de Madytos. This later period of time from 1821 to present was excluded from

Wellesz's research.[1] Rather than using the term Neo-Byzantine, which I will adopt for the present study, Wellesz labeled this period as Neo-Greek. Most of the other western authors on Byzantine music have also excluded this period. However, some basic information about the Chrysantean notation system can be found in J. B. Rebours's *Traité de Psaltique* (Paris 1906).

The reform in Byzantine music at the beginning of the nineteenth century was focused not only on the notation system, but included also a reform of theoretical concepts as well as a reform in repertoire. Under the leadership of Chrysantos de Madytos, these reforms were made by a group of Byzantine musicians who represented the different territories of the Byzantine tradition. These reforms were immediately adopted and implemented in several countries using the Byzantine traditions, including Greece, Serbia, Romania, Bulgaria, and Russia. The old Byzantine repertoire was copied into the new notation and adapted to the new theoretical concepts. Therefore, the Neo-Greek label for this period does not appear to be a proper one.

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[1] Egon Wellesz, *A History of Byzantine Music and Hymnography,* (Oxford: Claredon Press, 1961), 149.

2. Another statement, consistent with the view of modern scholars, which was proposed by Wellesz in the work mentioned above, is that the general identification of "Byzantine music" should be applied to Eastern ecclesiastical chant, sung in Greek.[2] This would, therefore, exclude the music in the Byzantine tradition which was sung in the vernacular.

Immediately after the fall of the Byzantine Empire in 1453, the various national Byzantine chant styles slowly began to develop. Because of the more stable political and economic situation in Russia, it was the first region to use vernacular texts. In the nineteenth century, under the impulse of newly gained independence, most of the Byzantine repertoire was translated in the vernacular in countries like Serbia, Romania, and Bulgaria. This also, supports the use of the term Neo-Byzantine, rather than Neo-Greek, for this literature.

3. The third exclusion made by Wellesz and his colleagues is related to the content and orientation of the selected works. Although some theoretical information is sparingly presented (mostly related to music notation), the main focus in all of these works is on the history and function of Byzantine

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[2] Ibid., B.

chant. This exclusive preoccupation with only musicological aspects has left a wide gap in the understanding of theoretical issues related to Byzantine music, especially the music of the Neo-Byzantine period.

The focus of this dissertation will be on exactly these three aspects of Byzantine music which have largely been ignored by Wellesz and the others.

1. The main focus of this work will be on Byzantine music after the Chrysantean reforms (1821) until the present. As mentioned above, this period will be labeled in this study as Neo-Byzantine. However, for comparative purposes and for a meaningful presentation of the development of Byzantine music from its beginnings to the present, many historical and theoretical aspects of Byzantine music before the Chrysantean reforms will also be presented.

2. The musical examples in this work are taken from the Greek repertoire and additionally from the Romanian repertoire which represents one of the national schools of Byzantine chant. The choice of chants from the Romanian repertoire versus chants of other traditions was primarily due to my somewhat limited access to Neo-Byzantine manuscripts. However, the Romanian chants will be used in this work to exemplify only general

theoretical issues of Byzantine music and not to study in detail the specific characteristics of the Romanian national style as opposed to other national styles. A comparative study of the various Byzantine national styles (Bulgarian, Greek, Romanian, Russian, and Serbian) and their different development, which will be excluded from this present work, will be the subject of intended future research.

3. Most of all, the goal of this work is to provide a missing link in the general knowledge of Byzantine music by presenting a systematic theoretical examination of this musical tradition. Again, the main focus will be on the music of the Neo-Byzantine period, but most of the theoretical concepts that will be discussed could quite easily be applied to the whole body of Byzantine music. Also, most of the theoretical concepts that are uniquely applicable to the Neo-Byzantine style will be compared with corollary concepts from the previous stylistic periods.

The material of this dissertation is organized in four chapters and progresses from the general to the more detailed aspects of Byzantine music. Chapter 1 presents a brief historical account of Byzantine civilization and art, a discussion of the most general characteristics of Byzantine music, and a comparison between the various characteristics of Greek, Byzantine, and Western ecclesiastic modes. Chapter 2 deals with the fundamental theoretical concepts in Byzantine music which are related to intervals, modes and rhythm. Chapter 3 is a study of the various Byzantine musical notation systems with a detailed description of the Neo-Byzantine system also known as the Chrysantean notation. In Chapter 4 the theoretical concepts presented in Chapter 2 are applied to chants in each of the eight modes.

CHAPTER 1

A HISTORICAL PERSPECTIVE

A Short History of the Byzantine Empire and its Civilization

The Byzantine Empire was the continuation of the ancient Roman Empire. Emperor Constantine the Great founded its capital city, Constantinople, in AD 330, at the crossroads of Asia and Europe. The boundaries and the state administration were the same as that of the Roman Empire in the third century. The Empire was divided into prefectures, each consisting of several dioceses, and each diocese was, in turn, made up of a number of provinces. There were four prefectures: 1) *Praefectura praetorio per Orientem* (The Eastern Prefecture), consisting of the five dioceses of Aegiptus, Oriens, Pontus, Asiana and Thracia; 2) *Praefectura praetorio per Illyricum* (The Illyrian Prefecture) which consisted of the dioceses of Dacia and Macedonia; 3) *Praefectura praetorio Illyrici, Italiae et Africae* (The Italian Prefecture) made up of dioceses of Italy, Latin Africa, Dalmatia, Pannonia, Noricum and Rhaetia; and 4) *Praefectura praetorio Galliarum*

(The Prefecture of the Gauls), consisting of Roman Britain, Gaul, the Iberian Peninsula and the western part of Mauritania.

The inhabitants of the early Byzantine Empire called themselves Romans and the Emperor considered himself a Roman ruler, a successor of the Roman Caesars. The foundation of a new capital on the shore of the Bosphorus was necessitated by the economical, political and religious crisis of the third century, but even more significant was the birth of a new culture, which resulted from the transplantation of the Roman political concepts of law and state administration to the hellenized East. Rather quickly, Greek became the official language, and other elements of Hellenism grew increasingly strong. Another important event that took place at the beginning of the fourth century, for which Constantine the Great also is credited, was the official recognition of Christianity. The Christian Church grew in size and influence during this period at an extraordinary pace. Before the fourth century was over, Theodosius the Great declared Christianity the dominant state religion. Thus, this historical phenomenon identified as the Byzantine Empire and its culture were the result of these three elements: the Roman political Empire, the Hellenistic culture and the Christian faith.

The Byzantine Empire not only inherited the territory of the Roman Empire, but also most of its economical and political problems. The third-century crisis was not resolved by moving the capital city from the shore of the Tiber to Bosphorus. After a short time of apparent stability, a period of decline began, which lasted for about four centuries. By the fifth century, Italy and some of the western territories had been trampled by the so-called barbarian conquerors. In the seventh and eighth century Egypt, Syria and Northern Africa were conquered by the Arabs, and Greece and the Balkans were temporarily lost to the Slavs. Therefore, by the ninth century, the Byzantine Empire had been reduced to the eastern Mediterranean territory and Asia Minor. However, this small territory became more manageable and united. This more coherent Byzantine society then reached the highest point of its existence. The Golden Era of Byzantium lasted for only about two centuries, from 850 to 1050. During the early years of this period a few of the old territories were recovered, followed by a period of expansion into what was essentially Slavic territory. One of the most important aspects of this period was that the Byzantine faith and culture were carried into the Slavic territory as far as Russia. Along with Greece and Macedonia, these are the territories where the Byzantine tradition has been kept alive until today, centuries after the disappearance of the actual Byzantine Empire. This territory consists of today's modern states of Russia, Romania, Bulgaria and Serbia.

The economy and commerce from 850 to 1050 were prosperous and Byzantine architecture and craftsmanship attained their greatest flowering. Beginning in the middle of the eleventh century, little by little, the centralized government structure began to disintegrate, and with it the enormous wealth and riches of Byzantium slipped through the hands of its emperors and nobility. Much of Asia Minor was lost to the Turks. There was continuous unrest among the Slavs in eastern Europe, who wanted to assert their independence. Western Europe was reviving from its dark age and was eager to reclaim supremacy. In 1204, as a result of what is known as the Fourth Crusade, the Westerners (or Latins as the Byzantines called them) conquered Constantinople and divided the Empire between the Venetians and Genoese. The Byzantines regained their capital in 1261 and managed to survive as an Empire for approximately two more centuries. It was primarily the diplomacy of some of its emperors, combined with pure luck, that saved Byzantium from an earlier extinction. The final chapter came in 1453 when the Turks, lead by Sultan Mehmed, conquered, ransacked and destroyed Constantinople, bringing an end to the Byzantine Empire.

Two important aspects of Byzantine society need to be mentioned, as they had particularly a significant impact on artistic life. First was the almost unbroken tradition of secular education and scholarship. In Byzantium, literacy and education were never clerical monopolies as they were in the west during the Dark Ages. There was a well-educated laity. The base of their scholarship was the ancient Greek authors and poets. An average educated Byzantine took pride in being able to quote from Homer and the classics.[3] The many lexicons and encyclopedias put together by the Byzantines give witness to their interest in scholastic knowledge. Art and scholarship were sustained by a well organized patronage system. The emperor was the supreme patron and benefactor of all, followed by numerous noble families, who took a special pride in sustaining a high standard of culture, piety and erudition.

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[3] D. M. Nicol. *The End of the Byzantine Empire* (New York: Holmes & Meier, 1979), 47.

A second important aspect of Byzantine life concerned the relationship between the Byzantine faith and the Hellenistic secular culture. This coexistence was an unique phenomenon, for the unthinkable did happen--a pagan tradition and a Christian faith blended together rather then clashing, as have been the case with Roman society in the first centuries after Christ. By the twelfth century, Byzantine society had assimilated with very few incidents the Hellenistic culture and moved towards a spiritual society based on the Orthodox faith. The Church was an essential part of everyday life, and was identified with society itself. The art of the late Byzantine Empire, a reflection of the Byzantine society, was essentially sacred in character and was found in the churches and monasteries. Most of the artists, whether chant composers, painters, mosaicists, icon-painters or craftsmen, were regarded as agents through whom the spirit was recorded, they remain anonymous. It was the spiritual life, the living Orthodox faith, which carried the Byzantines through the trauma of Turkish occupation and made possible the survival of their culture.

Characteristics of Byzantine Music

Byzantine chant was established in the framework of the Orthodox faith soon after the formation of the new Byzantine Empire in the fourth century. Influenced by the important historical events mentioned above, Byzantine music has continuously evolved, but the essential unity of the forms of Byzantine music has been assured by four characteristics which have remained unchanged from the time when the Byzantine chant first appeared until this day: the sacred character, the vocal character, the monodic character, and the modal character.

The Sacred Character

Byzantine music has influenced and in turn has been influenced by secular music of various origins. However, the interaction between the western sacred and secular traditions has been more significant. Within the religious society of Byzantium the music has managed to preserve its essential sacred character over the centuries. A number of musicologists, among them Egon Wellesz, Milos Velimirovic, Father Petrescu, and Oliver Strunk, have described in their writings[4] the sacred character of Byzantine music and its function in the Orthodox liturgy, an aspect of Byzantine music which I will not duplicate in this study.

The Vocal Character

The vocal character of Byzantine music is very much related to the legacy of the Jewish Synagogue and the biblical order of instruments. The original, natural instrument is the human voice, thus it was thought to be the most appropriate to bring praises and prayers to God. This principle is upheld by Paul in his epistle to the Ephesians where he advises the first century Christians to sing psalms and hymns and spiritual songs, singing and making melody to the Lord.[5]

In the view of the writers of the Bible, instruments were man-made inventions. It was Jubal whom the Bible first mentions playing instruments,[6] and he was from a disgraced family, a descendent of Cain, who was vilified for killing his brother Abel. The Hebraic tradition also associated different instruments with certain symbols, and this remains very much alive in many parts of the world today. The brass instruments, represented by the *chatsotserak*[7] and the *shophar,*[8] symbolized the voice of God or His message. They were used to call the people to the temple for worship.[9] They were sounded louder and louder as God gave His Ten Commandments.[10] They caused the fall of Jericho's walls,[11] and the angel of God will sound them again in the resurrection day.[12] The stringed instruments, namely the *kinor,*[13] *nebel,*[14] and the lute represented the element of stability. Everywhere in the Bible when God was to be praised with brass, woodwinds and percussion, the string instruments were to be present. It was the sound of David's harp, a stringed instrument, which brought peace and stability to the troubled mind of Saul.[15] The woodwinds, consisting of

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[4] Egon Wellesz. *A History of Byzantine Music and Hymnography.* (Oxford: Claredon Press, 1961); idem, "Words and Music in Byzantine Liturgy." *The Musical Quarterly,* XXXVIII (1947), 197-310.; Milos Velimirovic. "Musique byzantine." *Encyclopedie des musiques sacrées.* (Paris, 1969, 145-164); Father J. D. Petrescu. *Les Idiomèles et le canon de l'office de Noël,* (Paris: Paul Geuthner, 1932); Oliver Strunk. *Essays on Music in the Byzantine World,* (New York: Norton, 1977).

[5] Ephesenians 5:19.

[6] Genesis 4:21.

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[7] The Silver Trumpet.

[8] Ram's-Horn.

[9] Numbers 10:2.

[10] Exodus 19:16.

[11] Joshua 7:21.

[12] I Corinthians 15:52.

[13] A small Harp.

[14] The Harp of David.

[15] 1 Samuel 16:23.

chalil,[16] *ugab,*[17] and a variety of other flutes represented the secular element. They are mentioned by David in his Psalms. He commanded that God should be praised with every instrument, but David was a secular ruler, a shepherd by trade. The Jewish tradition shows that apart from the time of David, these instruments were not used in the temple, but rather for occasions of secular pleasure, parties, and celebration.[18] Perhaps the most serious of these instruments was the ancient oboe, being the instrument of choice for music of mourning. The instruments used by the pagan Canaanites in the worship of their two gods, *Baal*[19] and *Astarte,*[20] were restricted to percussion and woodwinds in what the Bible describes as deafening or strident noise.[21] There was however, a wind instrument that was used in the temple, called the *magrepha.*[22] This instrument, an ancient organ, did not exist in the Old Testament times, thus is not mentioned in the Bible, but it is described in the *Talmud.* The evolution of society in the western world from religious to a more secularized condition reflects the same symbolistic value attributed to the various instruments. At the end of the Medieval Era only vocal music was allowed in the Roman Catholic liturgy. Then the organ made its way into the church. During the Renaissance the brass instruments and the strings slowly received acceptance. The Baroque era added the woodwinds, the first and most used of them being the oboe. The Classical era introduced the German flute and the clarinet. Apart from the timpani, introduced as an addition to the brass during the Baroque era, the percussion section even today is still very cautiously used in most sacred music.

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[16] Ancient Oboe.
[17] The Pan-Flute.
[18] Israel Rabinovitch. *Of Jewish Music,* (Montreal: Book Center, 1952), 18.
[19] The male god or sun-god.
[20] The female god or moon-god.
[21] Amos 5:23.
[22] Ancient Organ of ten pipes, wind chest and ten keys played with the fingers.

The Byzantine church made no use of any instruments for its religious services. The only instruments allowed in the church were brass instruments, used in the first centuries to great the Emperor as he entered the church, and portable organs, which sounded outside the church doors. Their purpose was to announce the end of religious services and the beginning of secular festivals, banquets and parties at special celebrations. As Byzantium moved toward a more pious society, by the twelfth century the use of instruments in the church service or festivities was completely eliminated.

The main reasons given for the condemnation of instrumental music was its pernicious effect on morals, and its essential connection with pagan rituals of both Greek and Roman civilizations.

The Monodic Character

From its very beginnings, in the fourth century, Byzantine and Western music developed in different directions in term of modal organization. However, they did share a common characteristic, the monodic character of the music, and this was mainly inherited from the Jewish synagogue liturgy. The only exception to monody in early Byzantine chant was the incidental octave doubling which resulted from a singing congregation formed by men as well as women.

From that time period until today, spectacular developments have occurred in western music history. Beginning with the innovations of early *organum*, a golden era of vocal polyphony appeared in the sixteenth century. The second important element in western music is harmony, which was completely established in the Baroque era. Composers of Classical, Romantic and Twentieth Century have been equally concerned with harmony and its rich number of possibilities. As a general evaluation, one could say that the main thrust of western music has been the exploration and combination of these two elements: polyphony and harmony.

Over the same span of time, Byzantine music has preserved its essential monodic character. Not being preoccupied with the development of polyphony or harmony, Byzantine musicians have invested the whole force of their creativity and ingenuity toward the development of melodic structure at a high level of sophistication and complexity. One is tempted to regard the conservation of monody in Byzantine music as restrictive to compositional freedom, since it prevents any experiment with simultaneous sounds. These experiments however, have led western music to other limitations, for instance, equal temperament tuning, with its “unnatural” intervals of standardized size. In this regard, Byzantine music remained "free" to use a much larger variety of sounds than those available to temperament tuning systems, and a richer palette of microtonal intervals. A detailed description of Byzantine intervals, as well as a comparison between the Byzantine division of the octave and its western counterpart will be made in the next chapter.

There is one unique form of Byzantine "harmony" which is represented by the *Ison*,[23] a second voice consisting of a continuous sound sung softly with open mouth on vocal "a." The pitch of the *Ison* is usually that of the fundamental of the mode, rarely the modal dominant[24] or both the fundamental and the dominant in a double *Ison*. The appearance of the *Ison* was necessitated by antiphonal singing. In the early Byzantine church, music was performed with the large participation of the lay worshipers, non professional musicians, which very easily could have departed from the original pitch of the chant. The two alternative singers or group of singers were kept to the initial intonation or brought back to it by the continuous sound of the *Ison*. The use of the *Ison* is appropriate only for chants in Slow and Moderate tempos and is subject to certain specific rules. A detailed description of the *Ison* and its use will be made in Chapter 4.

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[23] In Greek = equal, uniform.

[24] Because the lack of a proper Byzantine terminology, the term dominant was borrowed from tonal music. The characteristics and function of modal dominant is though different from those of tonal dominant. A description of modal dominant and its function will be made in the next chapter under the subtitle "Functions of Scale Degrees in Byzantine Modes."

The Modal Character

The melodic structure of Byzantine chant is essentially related to its modal character. Byzantine music uses eight modes, four authentic and four plagal. Some authors have identified Byzantine modes with the ancient Greek modes, while others associated them with the liturgical church modes of western music. Much of the confusion has been due to the fact that over the centuries theorists have labeled the Byzantine modes as well as Ambrosian and Gregorian Modes, with the names of the ancient Greek modes: Dorian, Phrygian, Lydian and Mixolydian. Recognizing this mistake, Egon Wellesz makes the following statement:

> Until recently the eight echoi in Byzantine music had been identified by modern scholars with the eight modes of ancient Greek musical theory. This was a mistake, because the Greek 'scales' - if we are permitted to use the term - were reckoned from

> the highest note downward, whereas the Byzantine theorists build up the modes from the lowest note upward . . .[25]

Wellesz is correct in his statement, but the distinction he makes between ancient Greek and Byzantine modes is, perhaps, the least important one of a number of essential differences. The fact is that most of the Byzantine, Gregorian, and Greek modes bearing the same name contain completely different interval patterns. The system of their internal organization (dichord, trichord, tetrachord, pentachord) is also different. It is appropriate, therefore, at this point to clarify the different identities of these modes.

The identity of the ancient Greek modes can be traced in a number of ancient treatises. The most important is the incomplete *Elements of Harmony* of Aristoxenus (b. ca. 365 BC.) followed by Aristidis Quintiliani's *Peri musikis*, written at the beginning of the second century BC., and translated into Latin by Marcus Meibomius in the seventeenth century.[26] In Greek theory the *tetrahordon*[27] was the essential unit from which all the modes were formed. The external notes of the tetrachord were fixed, and called *estotes*,[28] while the notes in the interior were subject to variable intervals, thus called *metaboles*.[29] By the different position of the *metabolon*, three genera of tetrachords were obtained.

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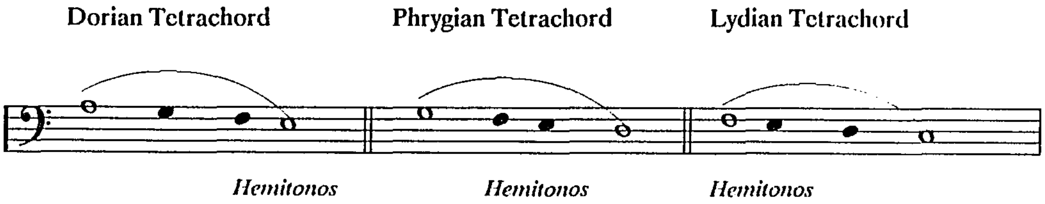
[25] Egon Wellesz. *A History of Byzantine Music and Hymnography,*2d ed. (Oxford: Claredon Press, 1961), 70.

[26] *Aristide Quitilianis De musica (Per musikis). Marcus Meibomius restituit a notis explicavit.* (Amstelodami, apud Ludovicum Elzevirium, 1652).

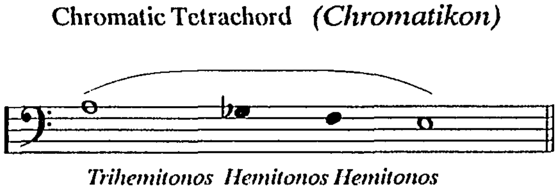
[27] In Greek = Tetrachord.

1. Diatonic tetrachord, with *tonos*[30] and *hemitonos*[31]

Accordingly with the position of the *hemitonos* , three types of diatonic tetrachords were formed:



2. Chromatic tetrachord, with *trihemitonos*[32] in its structure:

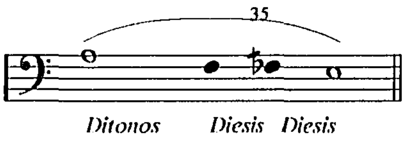

Chromatic Tetrachord (Chromatikon)
Trihemitonos Hemitonos Hemitonos

---

[28] In Greek = Fixed.
[29] In Greek = Mobile.
[30] In Greek = Tones.
[31] In Greek = Semitones.
[32] In Greek = Three semitones (augmented second).

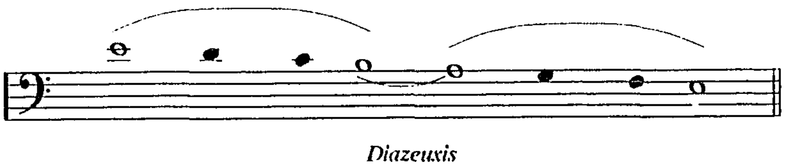
3. Enharmonic[33] tetrachord, with *diesis*[34] in its structure:

Enharmonic Tetrachord *(Enharmonion)*

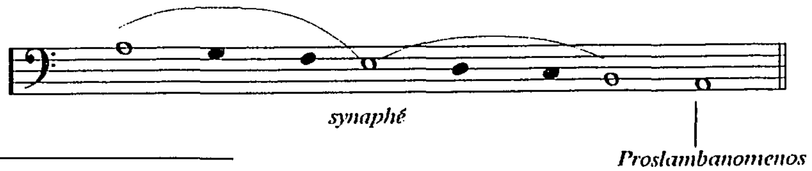


The modes were then obtained by the conjunction of two of these tetrachords which were connected in two ways:

1) by the separating interval of a tone called *diazeuxix*[36]



2) by a common note called *synaphé*.[37] To complete the scale a note called *proslambanomenos*[38] was added at one of the extremes.



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[33] In Greek music as well as Byzantine music this term has a different meaning than in western music. It refers to a musical unit containing microtones.

[34] Quartertone.

[35] 𝄳 lowers the note with a quartertone.

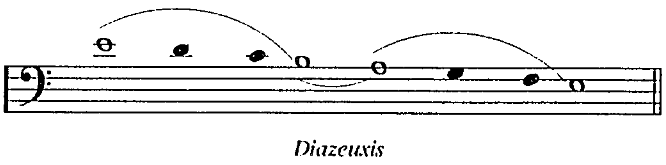
[36] In Greek = Separation.

[37] In Greek = Connection.

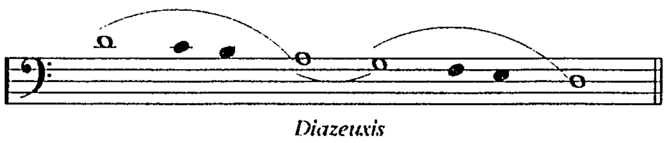
[38] In Greek = Added sound.

Through the conjunction of two diatonic tetrachords connected by *diazeuxix*, the three principal diatonic modes were obtained:

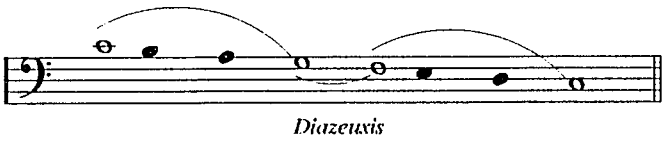
Dorian Mode



Phrygian Mode



Lydian Mode



The names of the modes suggest their ethno-geographical origins: Doria, a region in mainland Greece; Phrygia and Lydia, provinces in Asia Minor.

The *dis-diapason*[39] of the mode as well as the secondary modes (hyper- and hypo-modes) were obtained by adding through *synaphé* with *proslambanomenos* a structurally identical tetrachord to the upper and lower part of the modal scale. Below are the *dis-diapason* of the three ancient Greek modes. Some of the hypo and hyper modes received an individual name and later became identified as independent modes, like the hyperdorian which was eventually identified as the mixolydian mode.

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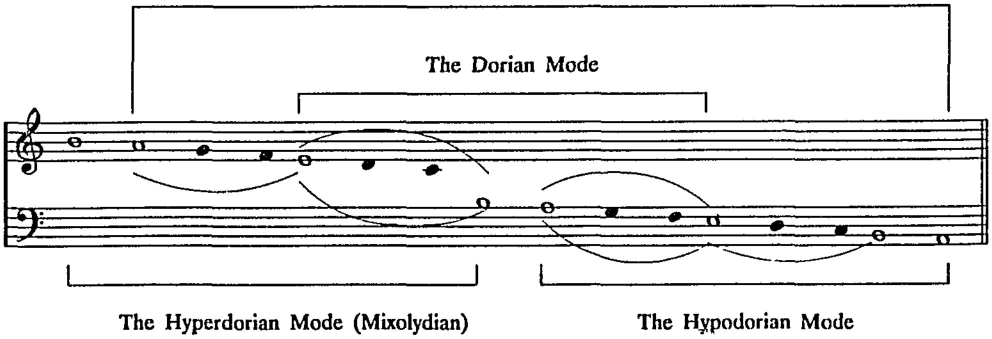
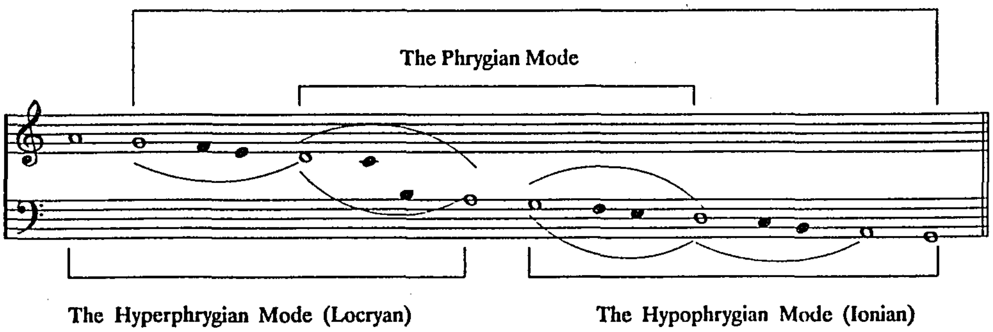
[39] In Greek theory = Double octave.

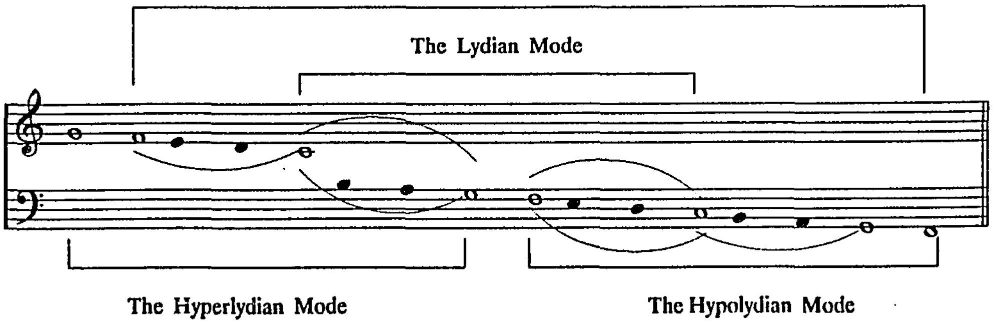
THE DORIAN DIS-DIAPASON



THE PHRYGIAN DIS-DIAPASON


The Phrygian Mode
The Hyperphrygian Mode (Locryan)
The Hypophrygian Mode (Ionian)

THE LYDIAN DIS-DIAPASON



In a similar manner, the conjunction of two chromatic or enharmonic tetrachords results in the formation of the chromatic and enharmonic modes respectively.

The Greek modes were essentially hierarchic functional. The highest note of the scale was the sound of primary importance toward which all the others gravitated. A secondary hierachic function, similar to the modal dominant, was given to one of the internal fixed notes of the tetrachords which formed the mode. Final melodic cadences occurred on the modal center or on the secondary function sound (modal dominant). Examples 1-1, and 1-2 are Greek melodies translated into western notation by Egert Pohlmann in his collection of ancient Greek diplomatic facsimiles and tanscriptions of most of the existing musical fragments, *Denkmäler altgriechisher Music.*[40]

Example 1-1 is a fragment from an ode composed by Pindar (518-466 BC.):

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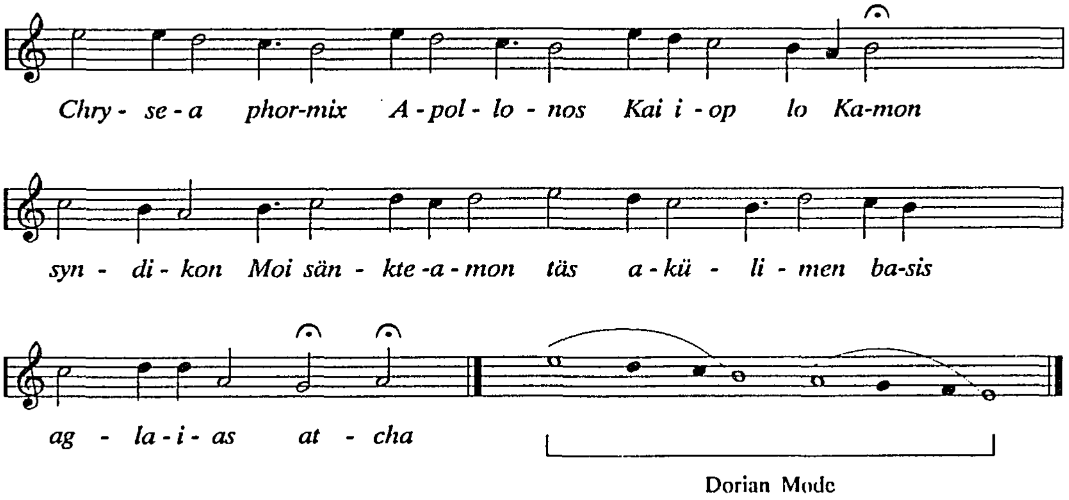
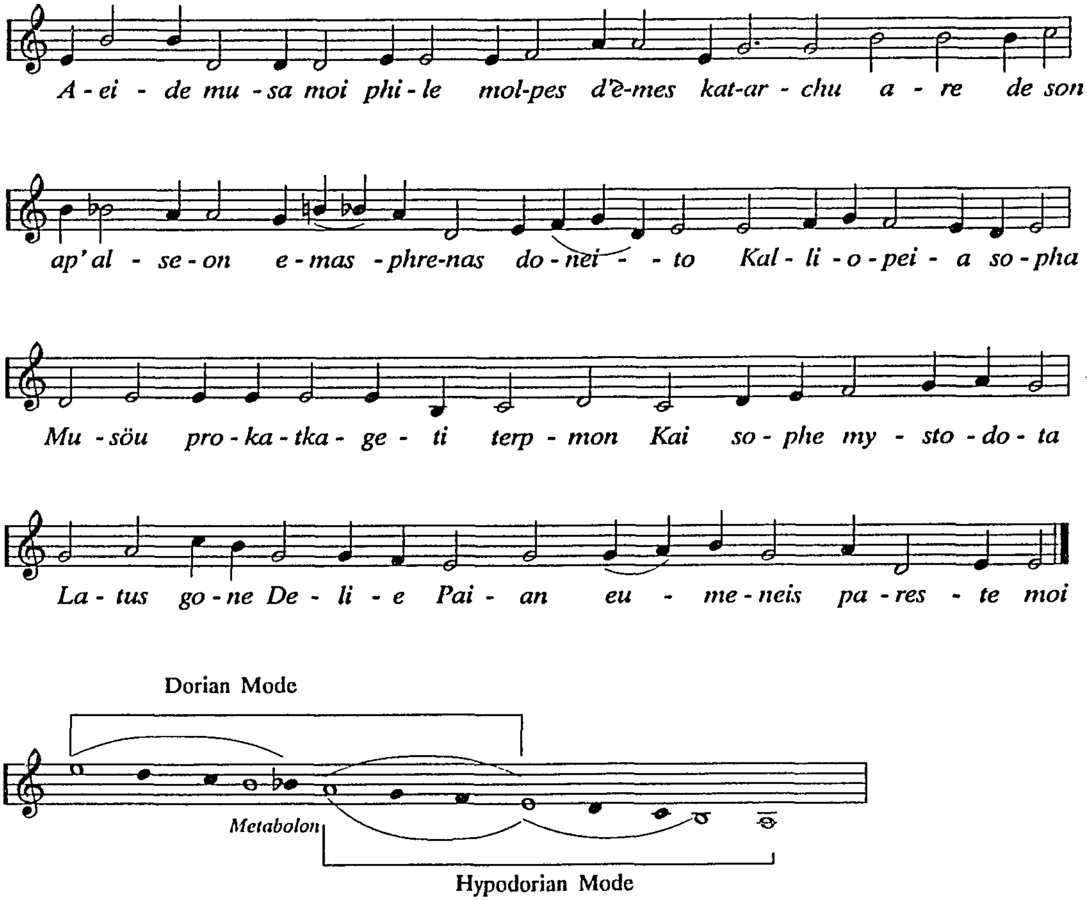
[40] Egert Pohmann. *Denkmäler altgriechisher Music,* (Nürnberg: H. Carl, 1970).

Example 1-1


Chry - se - a phor-mix A - pol - lo - nos Kai i - op lo Ka-mon
syn - di - kon Moi sän - kte - a - mon täs a - kü - li - men ba-sis
ag - la - i - as at - cha
Dorian Mode

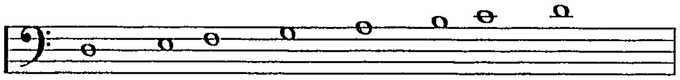
Example 1-2 is a hymn to the Muse Calliope, one of the nine daughters of Zeus and Mnemosines, composed by Mesomedes of Crete about 150 AD. The melody of the hymn is in Dorian mode, extending to the hypodorian and using a *metabolon* or mobile note.

Example 1-2

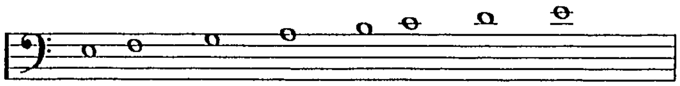

A - ei - de mu - sa moi phi - le mol-pes d'ĕ-mes kat-ar - chu a - re de son
ap' al - se - on e - mas - phre-nas do - nei - - to Kal - li - o - pei - a so - pha
Mu - söu pro - ka - tka - ge - ti terp - mon Kai so - phe my - sto - do - ta
La - tus go - ne De - li - e Pai - an eu - me - neis pa - res - te moi
Dorian Mode
Metabolon
Hypodorian Mode

The first codification of western ecclesiastic modes is attributed to Ambrose (340?-397), Bishop of Milan. Although most of the repertory known under the name of Ambrosian chants was developed after his time, Ambrose remains important because he established the bases for modal development in western liturgical music. The number of modes was limited to four.

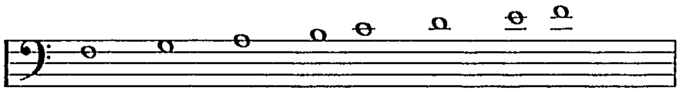
Modus 1 - Dorius



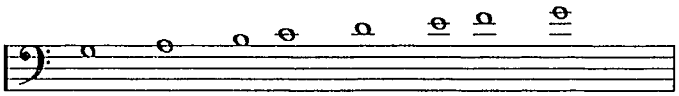
Modus 2 - Phrygius



Modus 3 - Lydius



Modus 4 - Mixolydius



These modes were a theoretical result of rather simple melodic lines, of monorhythmic character, with a range of no more than an octave as can be observed in example 1-3[41].

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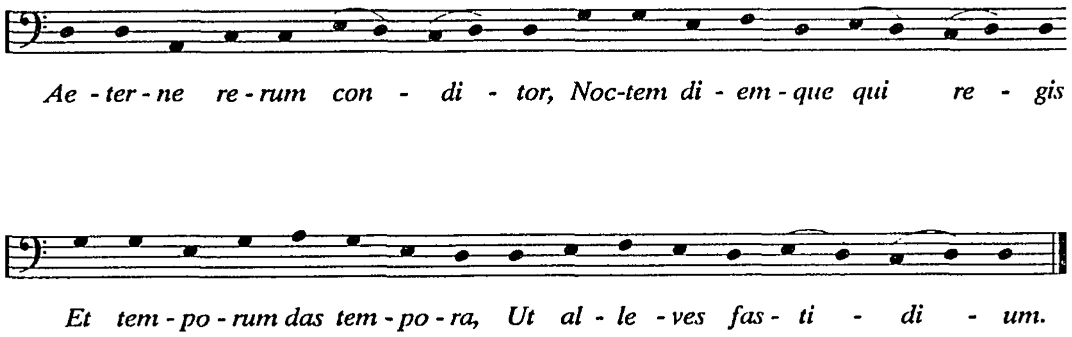
[41] Archibald T Davison and Willi Apel. *Historical Anthology of Music,* (London: Oxford University Press, 1949), 10.

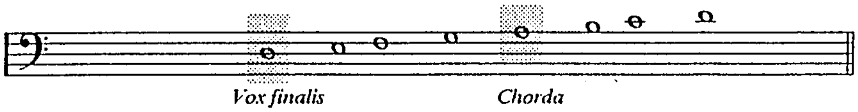
Example 1-3


Ae - ter - ne re - rum con - di - tor, Noc-tem di - em - que qui re - gis
Et tem - po - rum das tem - po - ra, Ut al - le - ves fas - ti - di - um.

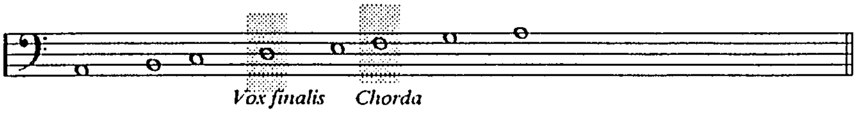
Beginning in the sixth century, a more elaborated form of chant was developed, called Gregorian chant after Pope Gregory the Great (540-604). The four Ambrosian modes were established as the authentic modes in this system. From them four additional modes were derived and labled plagal. The source considered authoritative in this classification of Gregorian modes consists of two treatises written in the eleventh century: the anonymous *Dialogus de musica*, and the *Micrologus* of Guido D'Arezzo.

The Diagram of the Gregorian Modes

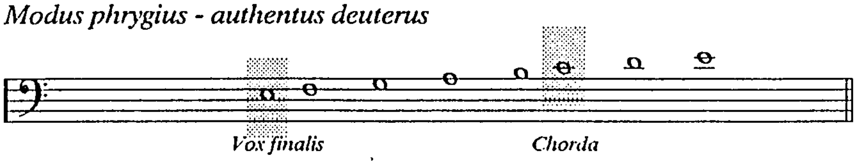
Modus dorius - authentus protus



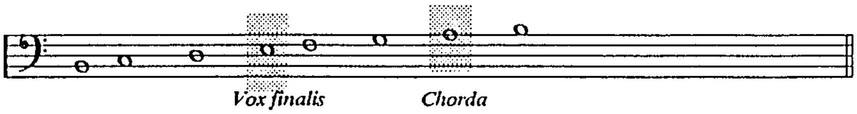
Modus hypodorius - plaga proti



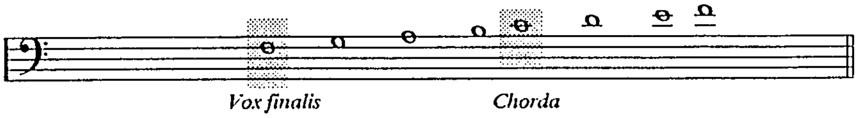
Modus phrygius - authentus deuterus



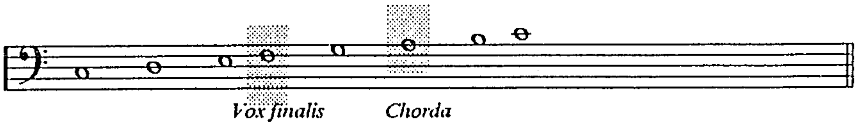
Modus hypophrygius - plaga deuteri



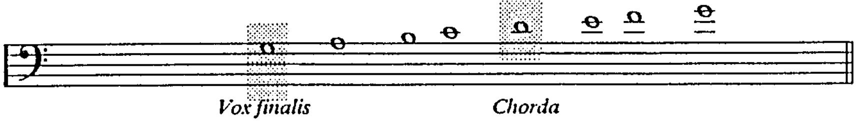
Modus lydius - authentus tritus



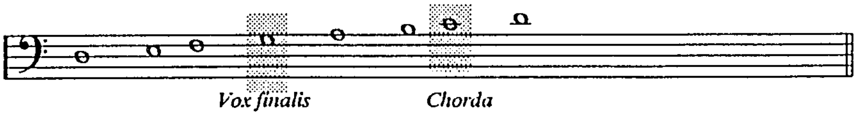
Modus hypolydius - plaga triti



Modus mixolydius - authentus tetrardus



Modus hypomixolydius - plaga tetrardi



Using the basic scalar organization of the Gregorian modes it is possible to establish several important theoretical characteristics.

1. All Gregorian modes were purely diatonic thus, western music totally departed from the practice of the chromatic and enharmonic melodies of the ancient Greek modes.

2. The structure of the modal scale is based on the conjunction of a tetrachord and a pentachord connected through a common note.

3. In each mode, two sounds retained principal functions: *vox finalis*--the modal fundamental, and *chorda*--the sound of melodic elevation and melodic predominance,[42] identified as the modal dominant and found in the authentic modes a fifth above *vox finalis*, or a third above *vox finalis* in the plagal modes. Because of the potential tritone relationship and its attraction to the note a half step above, *chorda* was moved a step up in the phrygian and hypomixolydian modes.

4. A special modal function is represented by *subtonum modi* - the note below the *vox finalis*, essential in melodic cadences of the Dorian, Phrygian and Mixolydian modes. During the Renaissance, *subtonum modi*

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[42] Another term used for this pitch was *tenor*.

was consistently raised, especially at the cadence point, and became a true leading tone.

5. Gregorian melody, called *cantus planus,* was considered to be in the authentic mode if the melodic line unfolded above the *vox finalis.* The exception was *subtonum modi.* Gregorian melody was considered to be in the plagal mode if the melodic line extends two to four sounds below *vox finalis.*

Example 1-4 [43] is a Gregorian chant in hypodorian mode. To avoid the tritone *(diabolus in musica*[44]*)* the note a third below the *vox finalis* was lowered by a half step, a common practice of the time to freely interchange the B with Bb. In Medieval and Renaissance manuscripts the notation of this flat was not practiced and not necessary, for it was understood that under no circumstances would the tritone be present or even implied.

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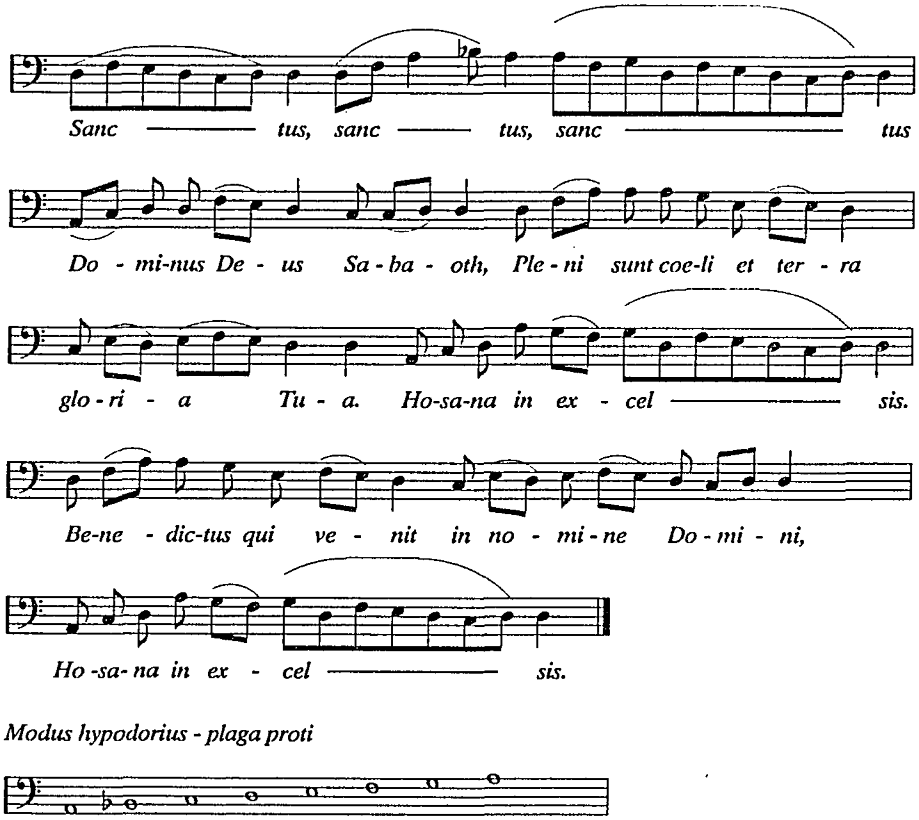
[43] Ermengildo Paccagnella. *Il canto gregoriano,* (Roma: Editioni del Centro di Studi Palestriniani, 1961), 19.
[44] The devil in music

Example 1-4



Sanc — tus, sanc — tus, sanc — tus
Do - mi-nus De - us Sa - ba - oth, Ple - ni sunt coe-li et ter - ra
glo - ri - a Tu - a. Ho-sa-na in ex - cel — sis.
Be-ne - dic-tus qui ve - nit in no - mi - ne Do - mi - ni,
Ho -sa- na in ex - cel — sis.
Modus hypodorius - plaga proti

Example 1-5[45] in hypolydian mode has the *vox finalis* on F and the *chorda* on A. B, which is used as an upper neighbor tone ornament of the *chorda,* is lowered by a half step to avoid a direct or implied tritone relationship with *vox finalis.*

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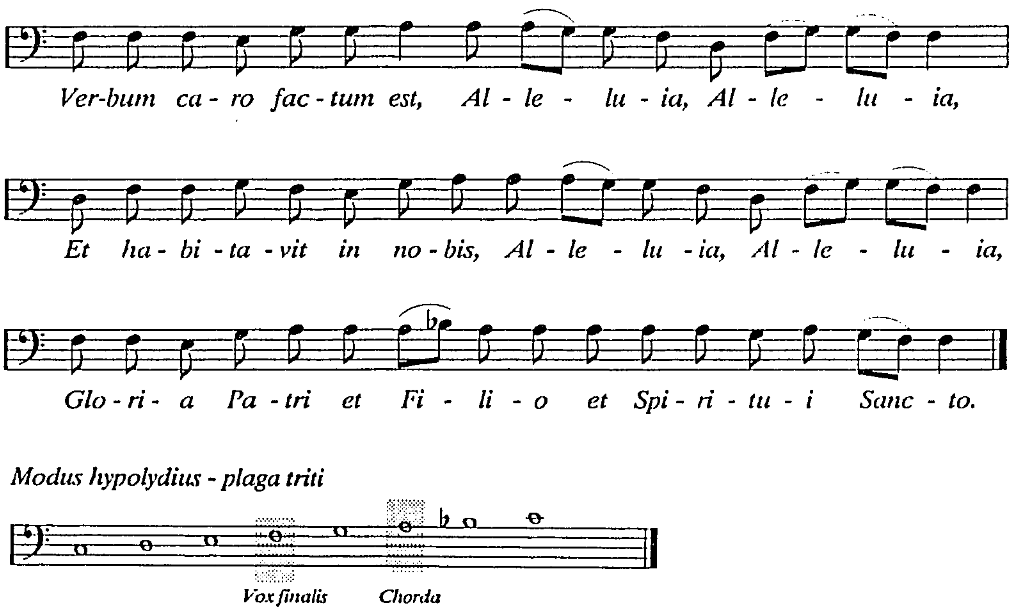
[45] Ermengildo Paccagnella. *Il canto gregoriano,* (Roma: Editioni del Centro di Studi Palestriniani, 1961), 19.

Example 1-5


Ver-bum ca - ro fac - tum est, Al - le - lu - ia, Al - le - lu - ia,
Et ha - bi - ta - vit in no - bis, Al - le - lu - ia, Al - le - lu - ia,
Glo - ri - a Pa - tri et Fi - li - o et Spi - ri - tu - i Sanc - to.
Modus hypolydius - plaga triti
Vox finalis
Chorda

In 1547, the Swiss theorist Glareanus (1488-1563), in his treatise *Dodecachordon,*[46] added four additional modes, two authentic and two plagal. These modes, which were mostly used during this time period in secular music, brought the total number of modes to twelve. The new authentic modes, Ionian and Aeolian, are, of course, synonymous with the natural minor and major scales of major/minor tonal music, which were to become the source scales for musical composition during the Baroque period.

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[46] Twelve modes.

A central issue in establishing the identity of the various Byzantine modes concerns the definition of the term mode itself. A study of Byzantine melodies reveals that they are built from a number of melodic formulae, specific for each mode, and that the resultant modal scales are not the actual source for the composition of Byzantine chant. Rather, particular melodic formulae and cadences taken together form the material which is represented by modal scales. Egon Wellesz was one of the first western musicologists to understand this concept.[47] Ultimately, the performers of Byzantine chant believe that the true identity of the Byzantine modes can not adequately be expressed by graphical representations or even theoretical definition because there is a specific and unique spirituality which can only be found in the actual performance of the chant. This spirituality is called by the Byzantines *ethos.*[48] The specific characteristics and internal structure of the individual

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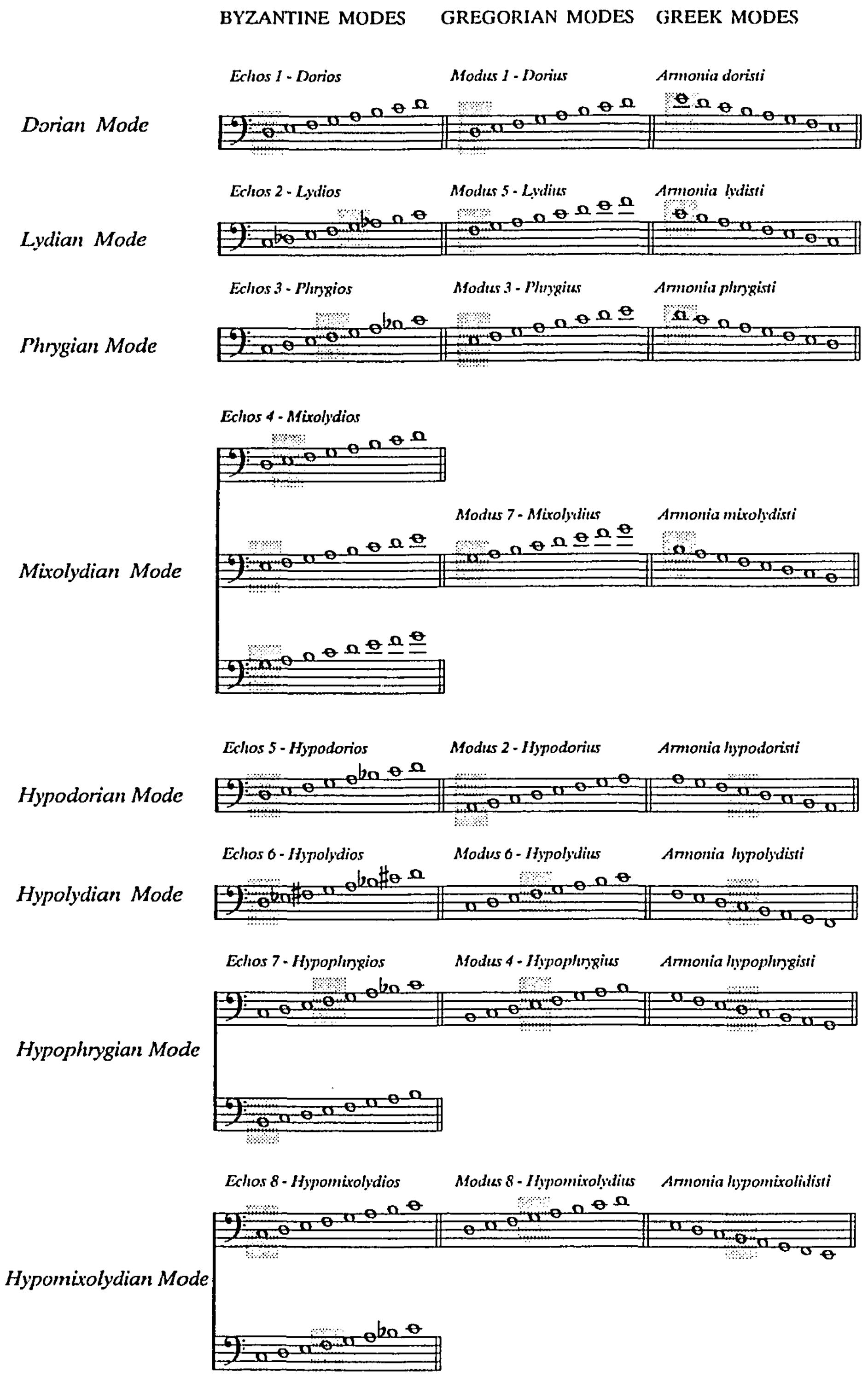
[47] Egon Wellesz. *A History of Byzantine Music and Hymnography,* (Oxford: Clarendon Press, 1961), 71.

[48] Spirit, Spirituality

Byzantine modes will be presented in detail the Chapter 4. For the general purposes the following diagram presents a comparison of the various modal scales in the three traditions.

Diagram of Neo-Byzantine, Gregorian and Ancient Greek Modes



Historical-Stylistic Periods of Byzantine Music

Influenced by important historical events and social and economic tendencies, the evolution of Byzantine music can be divided into three general stylistic periods: The Paleo-Byzantine Style or the Old Byzantine Style, covering the period between the fourth century to the Fourth Crusade in 1204; the Medio-Byzantine Style or the Middle-Byzantine Style, which extends from the thirteenth century to the end of the eighteenth century; and the Neo-Byzantine Style, from the nineteenth century to the present.

The Paleo-Byzantine Style

It is very difficult to clearly define all characteristics of the Paleo-Byzantine Chant because of the lack of written musical documents. In this period, the music was mainly transmitted as an oral tradition. Byzantine musical semiography began developing slowly in the tenth century, reaching a more definite form by the twelfth century. The few written documents representing old Byzantine musical scripts are still on the research tables of paleographers, and remain undeciphered. In general, attempts to reconstruct the Paleo-Byzantine Style begin by observing the character of the other arts in the same time period, primarily painting and architecture. Also, several accounts of music-making at ecclesiastic ceremonies, found in manuscripts and letters of the time, help us to understand what the music of Paleo-Byzantine period might have been like.

Most musicologists agree that the main characteristic of the earliest Byzantine music was its simple and yet monumental singing of the masses of worshipers within the Orthodox liturgical service. During the span of its existence, that is about eight centuries, the Old Byzantine Chant had its own independent evolution.

One primary form of the Old Byzantine Chant was *Cantus Psalmodicus*,[49] inherited from the Hebrew *Psalmus Responsorius*,[50] which consisted of an *Alleluia* or *Kyrie Eleison* response by the congregation to one or two verses chanted by a soloist. The solo chant was a type of dramatic recitative with few melodic inflections, midway between recitation and singing, called *Cantus Ekphonesis*.[51] Another form, customary in the service of the Jewish Temple and practiced by the early Christian churches of the first centuries AD, was *Cantus Antiphonus*,[52] where the chant was sung by alternating choirs. The difference between the antiphonal singing at the Jewish Temple and the Byzantine church was that the Byzantines did not use professional choirs. The music was sung by lay people. The actual congregation was itself divided in two antiphonal groups. Therefore, the melodies, were quite simple, and identified as *Cantus simplex*,[53] or in Greek *Sintomon melos*. Byzantine music and, generally, Byzantine art, has been characterized by anonymity. Most works of art bear no name of authorship, and with the few recognizable names it is difficult to designate specific authorship. Beginning in the fifth century, documents do reveal the names of some ecclesiastic poet-musicians of this period: Anatolios in the fifth century, Romanus in the sixth century, Andrew of Crete and Sergius of Constantinople in the seventh century, and John Damascene (of Damask) and Kosma of Jerusalem in the eighth century. The activity of these famous musicians led the Byzantine church towards a more soloistic music and transformed *Sintomon melos* into a more ornate form of chant, the melodic cantilena with its lyric and meditative character. Through the soloistic chant Byzantine music lost its grandeur but gained in the development of its melodic details. In the eighth century, John Damascene in his anthological work entitled *Octoëchos*,[54] diversified the melodic cantilenas in all eight modes of Byzantine music. The Golden Era of Byzantium is another step in the evolution of the Byzantine chant from simple and monumental to more detailed and expressive. During this period the other arts follow the same trend. The architectural artists used fine reliefs and embroidered ornaments in metal and ivory. The polychrome mosaic developed. The nobility wore luxurious fabrics with rich ornaments of silver and gold in a display of wealth and self-confidence. The Byzantine typographers adorned the book covers with precious bindings and the borders of their pages with fine artistic work. From the melodic cantilena, the Byzantine musicians developed another form of chant, very ornate and melismatic in character, called *Cantus ornatus*.[55]

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[49] In Latin = Psalm chant.
[50] In Latin = Responsorial Psalm.

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[51] In Greek *Ekphonesis* = exclamation, proclamation, solemn reading.
[52] In Latin = Antiphonal chant.
[53] In Latin = Simple chant

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[54] In Greek Octo = eight, echos = modes.

With *Cantus ornatus*, all of the principal forms of Byzantine music were finally established. These coexisting forms continued in a parallel development over the next succeeding stylistic periods. The four forms of old Byzantine chant correspond to the four idioms of Neo-Byzantine chant in the following manner:

- *Cantus ekphonesis* corresponds to the *Recitative chant*
- *Sintomon melos* corresponds to the *Hirmologic chant*
- Cantilenic chant corresponds to the *Sticheraric chant*
- *Cantus ornatus* corresponds to the *Papadike chant*

Toward the end of the Paleo-Byzantine period, the musical semiography gradually developed, realizing a more defined form in the twelfth century.

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[55] In Latin = Ornated chant

The Middle Byzantine Style

All the forms established in the Paleo-Byzantine period continued and developed. The preferred form, *Cantus ornatus*, was, however, sometimes taken to excess. This excess is reflected in a increasingly complicated semiography with many signs for the rich ornamentation of the melody. During this era a new trade also made its appearance in Byzantine music, that of the *melurgos*,[56] who were arrangers and imitators of old Byzantine chants. Their work was mostly oriented towards the ornamentation of preexisting melodies. The Romanian Patriarch, Father Petrescu, strongly criticized the work of the *melurgos* as a disservice to the authenticity of the Byzantine music.

> A partir de cette époque (XIII-e siècle) commença l'influence des mélurges, embellisseurs d'anciennes mélodies, mutilateurs, farfois aussi, de ces mélodies.[57]

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[56] In Greek = Musicians.

[57] "At the beginning of this period (thirteenth century) begin the influence of the *melurgos*, embellishers of ancient melodies, sometimes also mutilators of these melodies."
La Père Petresco. *Les Idiomèles et le canon de l'office de Noël,* (Paris: Librairie Orientaliste Paul Geuthner, 1932), 50.

The decline of the Byzantine Empire opened the door for foreign influences to appear in Byzantine art. The various folkloric influences prompted the birth of national Byzantine chant styles, like the Serbian, Romanian, Bulgarian and Russian styles. The Turkish occupation in 1453 aggravated the tendency toward hyperornamentation because the Turkish music itself had a highly ornate nature. Consequently, the use of enharmonic modes with microtones and augmented seconds became common. Nevertheless, the pure Byzantine musical tradition, aided by a very conservative Orthodox church, managed to preserve its essential authenticity and *ethos* (spirituality).

The Neo-Byzantine Style

At the beginning of the nineteenth century, as the Turkish Empire begin to disintegrate, the eastern countries once part of the Byzantine Empire began to again assert their independence. In 1804 Serbia revolted under Karageorge and was recognized by the Turks as an independent state in 1828. After the Russian-Turkish War (1877-78), equally fought by Romanians and Bulgarians, Romania became an independent kingdom and Bulgaria was recognized as an autonomous principality. Parallel with the political struggle at the beginning of the nineteenth century, a spirit of cultural revival arose.

The composers and theorists of the Neo-Byzantine Style undertook the difficult task of purifying Byzantine chant and restoring its authentic beauty. The restoration began with the revision and reinstitution of the original eight modes, the re-establishment of authentic Byzantine forms, cadences and melodic formulae, and an attempt to eliminate the foreign elements. Finally, the semiography went through a process of simplification.

Among the Byzantine theorists who propounded these reforms at the beginning of the nineteenth century were Chrysantos de Madytos, Hurmuz Hartophylax, and Gregory Leviticus. The most influential of this group was Chrysantos de Madytos. His most important contribution is recorded in two treatises on the Theory of Byzantine music: *Isagoghi is to theoritikon ke praktikon tis ekklesiastikis musikis,*[58] Paris, 1821, and *Theoritikon mega tis musikis,*[59] Trieste, 1832.

Rather than creating a completely new style, Neo-Byzantine chant represents a general and selective synthesis of the previous periods.

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[58] Introduction to the Theory and Practice of the Ecclesiastic Music.
[59] The Great Theoretical Treatise of Music.

The Neo-Byzantine chants are set equally in all three genera of Byzantine melody (diatonic, chromatic and enharmonic), and they use the eight Byzantine modes in the four idioms[60] (Recitative, Hirmologic, Sticheraric and Papadike).

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[60] A discussion of the four idioms of Byzantine chant will be made in Chapter 2.

CHAPTER 2

FUNDAMENTALS OF BYZANTINE MUSIC THEORY

This chapter presents a theory of intervals, modes, and rhythm for the existing Byzantine music. Because Neo-Byzantine Chant is a synthesis of the previously noted stylistic periods, many of the theoretical elements described in this chapter are valid for the entire body of Byzantine music. Therefore, musical examples from all stylistic periods will be used.

An Examination of Byzantine Interval Theory

The study of Byzantine intervals must first take into consideration the vocal and monodic character of this musical art. Byzantine music uses an untempered tuning system, consisting of a rich variety of intervals, including microtones. An important element in the theory of Byzantine intervals is octave equivalence, which is an element common to all western music. However, differences exist in the division of the octave into elementary units. In equal temperament tuning, the octave is, of course, divided into twelve equal semitones. In performance practice, however, singers, woodwind, brass and string instrument players actually use just tunings, and, guided by their ear, seek to perform pure intervals according to the melodic and harmonic function of their constituent tones.[61] In order to account, from a theoretical point of view, for the differences in intonation, several attempts have been made to divide the octave into smaller units. One such attempt is based on an intonational system first proposed by the German mathematician and astronomer Nicolaus Mercator (1620-1687) and by the English theorist William Holder (1614-1696).[62] This system, called unequal temperament,[63] consists of dividing the octave into fifty-three equal intervals or degrees. The whole step has nine degrees, while the semitone or half step has two dimensions: four degrees for the diatonic semitone and five degrees for the chromatic semitone. For instance, in C major ascending, the interval C--C#, because C# is chromatic, has five degrees, while C#--D has only four degrees since C# becomes a secondary leading tone tonicizing D in relation to which it becomes diatonic. Conversely descending, D--Db has five degrees while Db--C has only four degrees. Thus, C# and Db are one degree apart, each one slightly closer to the note towards which its resolution gravitates.

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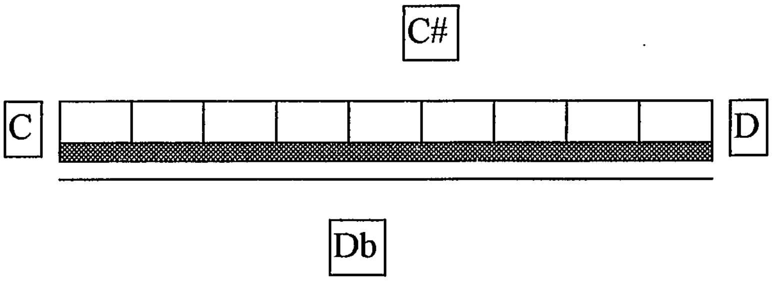
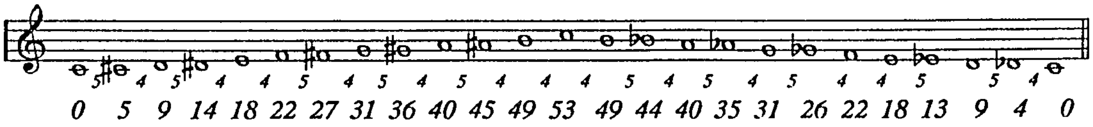
[61] Paul Hindemith. *The Craft of Musical Composition*. Book 1. Trans. Arthur Mendel.(New York: Associated Music Publishers, 1942), 44.

[62] Hermann L. F. Helmholtz. *On the Sensation of Tone*. Trans. Alexander J. Ellis. Fifth Ed. (London: Longmans, Green, and Co., 1930), 329.

[63] Victor Giuleanu. *Principii fundamentale în teoria muzicii*, (Bucharest: Editura Muzicala, 1975), 63-66.



This system does not result from principles of natural sound production, but from pure mathematical deduction. It does reflect a more realistic compromise between equal temperament and the actual performance practice of singers and performers compelled by their aural senses to produce intervals according with the natural teleological tendencies of resolution in modal and tonal music. Below is an illustration of the division into fifty-three degrees of the C major octave:



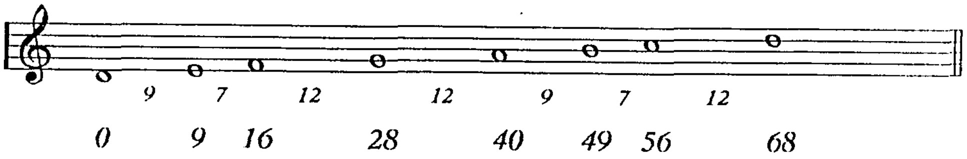
In an attempt to account for the intonational practices and the varying size of different intervals in Byzantine music, Chrysantos de Madytos divided the Byzantine octave into 68 degrees.[64] Madytos described three types of diatonic intervals between two consecutive notes:

Mizon--a large tone comprised of twelve degrees,

Elasson--a small tone comprised of nine degrees,

Elahistos--the smallest tone comprised of seven degrees.

The division of the diatonic octave made by Chrysantos de Madytos



Because the division of Madytos was considered still insufficient for a completely accurate account of the different sizes of microtones, in 1881, at an International Conference on Byzantine Music, a division of the octave into 72 degrees was proposed.[65] Most Byzantine theorists however, adopted the division of octave proposed by Madytos.

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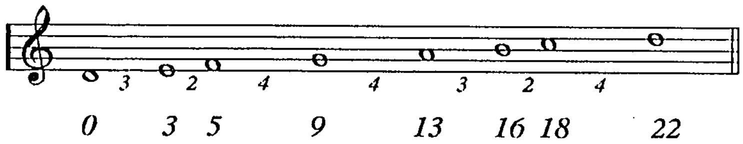
[64] Chrysantos de Madytos. *Theoritikon mega tis musickis,* (Triest: 1832), 21.

A simplified and more practical division of the octave was calculated by the Romanian rhapsodist, composer, and theorist Anton Pann.[66] This division, although it does not accurately specify the exact size of the Byzantine intervals, does offer an approximate equivalence in relation to the intervals in western European music and thus, makes possible a translation of Byzantine melodies into western notation. This is a crucial matter for this study as it is for any attempt to present a meaningful account of Byzantine music to the western musician. In the octave division proposed by Anton Pann the large tone has four degrees, the small tone has three degrees, and the smallest tone has two degrees.

The division of the diatonic octave made by Anton Pann



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[65] Jacques Chailley. *L'imbroglio des modes,* (Paris: Alphonse Leduc, Editions Musicales, 1960), 68.
[66] Anton Pann. *Bazul teoretic si practic al muzicii bisericesti,* (Bucharest: Editura Episcopala, 1845), 87.

One degree in Anton Pann's octave division is equivalent to the equally tempered quartertone and serves a basic unit of measurement. The smallest tone is equivalent with the western semitone and the large tone with the whole step.

To adjust to notational requirements, minimal additions are necessary, specifically those related to the notation of the quartertone. One of the simplest and most effective graphic representation was suggested by the Romanian composer George Enesco in his *Sonata No. 3 for Piano and Violin "în caracter popular românesc"*[67] opus 25 (1926), and opera *Oedip* (composed between 1923 and 1931 and premiered in Paris on March 13, 1936).

one quartertone raised	𝄲--semisharp
one quartertone lowered	𝄳--semiflat
three quartertones raised	𝄲♯--ultrasharp
three quartertones lowered	♭𝄳--ultraflat

---

[67] In Romanian folk style

Byzantine music uses all the standard intervals known in western notation, with the addition of the quartertone, the small tone (semitone + quarter tone), the hypoaugmented second in chromatic mode 2 (large tone+quarter tone), and the hyperaugmented second in enharmonic mode 6 (large tone+three quartertones). Although theoretically many intervals are possible, because of its pure vocal character and specific melodic structures, Byzantine music rarely uses intervals larger than one octave.

The classification of Byzantine intervals, which was inherited from the ancient Greeks,[68] takes into consideration the melodic potential of each individual interval as well as the difficulty in vocal performance.

1. *Homophonos*[69] intervals	- unison (*ison)* - octave (*diapason)*
2. *Symphonos*[70] intervals	- fifth - fourth
3. *Emmelis*[71] intervals	- semitone - large tone - small tone - minor and major third

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[68] Classification made by the Greek astronomer and geographer Ptolemey (second century AD)

[69] In Greek = identical sounds

[70] In Greek = related sounds

[71] In Greek = convenient, consonant

4. *Ekmelis*[72] intervals	- augmented and diminished intervals - quartertones - minor and major sixth - minor and major seventh

The intervals in the *homophonos* and *symphonos* categories generate stability and neutrality, having either no potential or weak potential for melodic motion. The intervals in the *emmelis* and *ekmelis* categories generate melodic instability, representing two increasing degrees of potential for melodic impulse and motion. As the translation of the above terms indicate, the intervals used in Byzantine music could be classified as consonant and dissonant intervals, but the meaning of these terms is unrelated with the western conception of tonal harmony, but is related only to the melodic function of the sounds forming the interval. The *homophonos* and *symphonos* intervals are defined as perfect consonant intervals because they are stable[73] and relatively easily performed. The intervals in the *emmelis* category are considered to be imperfect consonant intervals. They have a moderate degree of melodic instability, but are still easy to sing. The intervals in the *ekmelis* category are dissonant because of their high degree of melodic instability and also because of the greater difficulty in the actual singing of these intervals, especially those involving quartertones.

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[72] In Greek = inconvenient, dissonant

[73] The stability of these intervals (octave, fifth, fourth) results from the very close relationship of the component sounds in the phenomenon of natural resonance (overtone series) of an individual pitch.

Byzantine intervals may also be classified according to the three melodic genera of Byzantine chant: diatonic, chromatic, and enharmonic. Diatonic intervals are those intervals formed within the diatonic scale: perfect unison, octave, fifth, fourth, large, small, and smallest seconds, minor and major third, sixths, and sevenths, the diatonic augmented fourth and its inversion, the diminished fifth. Chromatic intervals are the augmented and diminished intervals obtained as a result of chromatic alteration. The most important chromatic interval is the augmented third, which is largely responsible for the specific character of the chromatic genera of the Byzantine chant. In Byzantine music, as well as in ancient Greek music, the term enharmonic has a different meaning than in modern western music. In modern theories grounded in equal temperament the term enharmonic refersto pitches that are identical even though they are spelled differently (for instance C♯ and D♭). In Byzantine and Greek theory, enharmonic refers to intervals smaller than the smallest tone (equivalent to a semitone), that is to microtones, or larger intervals involving microtones, for instance the three quartertone interval.

A Theory of Byzantine Modes

In the first chapter it was mentioned that the identity of a Byzantine mode can not be not represented solely by the modal scale, but also must include the different melodic formulae and cadences specific for that mode.). Therefore, a complete theory of Byzantine modes involves 1) the study of modal scales, 2) functionality of different scale degrees, 3) melodic formulae and cadences, and 4) the four idioms in Byzantine chant (Recitative, Hirmologic, Sticheraric, and Papadike).

The eight Byzantine modes, called *echos*, are divided in two groups: four labeled authentic[74] and four labeled plagal.[75] Different nomenclatures have been used to identify these eight modes. The most frequent used nomenclature identifies the modes by their numerical order.

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[74] In Greek *authentes* = reality that can not be doubted

[75] In Greek *Plagios* = derived,

Authentic Modes	**Plagal Modes**
Mode 1 - Protos	Mode 5 - Plagios Protos
Mode 2 - Deuteros	Mode 6 - Plagios Deuteros
Mode 3 - Tritos	Mode 7 - Plagios Tritos
Mode 4 - Tetardos	Mode 8 - Plagios Tetardos

In Byzantine manuscripts of the Medio-Byzantine Period, two other systems were used.

1. Using names borrowed from the antique Greek modes

Authentic Modes	**Plagal Modes**
Mode 1 - Dorios	Mode 5 - Hypodorios
Mode 2 - Lydios	Mode 6 - Hypolydios
Mode 3 - Phrygios	Mode 7 - Hypophrygios
Mode 4 - Mixolydios	Mode 8 - Hypomixolydios

2. Using the first letters of the Greek alphabet

Authentic Modes	**Plagal Modes**
Mode 1 - α (alpha)	Mode 5 - Plagios α
Mode 2 - β (beta)	Mode 6 - Plagios β
Mode 3 - χ (gamma)	Mode 7 - Plagios χ
Mode 4 - δ (delta)	Mode 8 - Plagios δ

In accordance with the melodic genera of intervals employed, the eight Byzantine modes are further divided into three categories: diatonic, chromatic and enharmonic. Modes 1,4, their plagal 5 and 8, and a variant of mode 7, belong to the diatonic genera, employing only diatonic intervals. Modes 2 and its plagal 6 belong to the chromatic genera, employing diatonic and chromatic intervals, especially augmented seconds. Mode 3, its plagal version 7, and some chants in mode 5 belong to the enharmonic genera, employing quartertone intervals.

Modal Scales

Comparable to the tonal scale in western music, the Byzantine modal scale provides an abstract representation of the structural relationships in the mode by viewing the sequence of its component pitches in ascending order. The Byzantine solmization system uses syllables deriving from the first letters of the Greek alphabet:[76]

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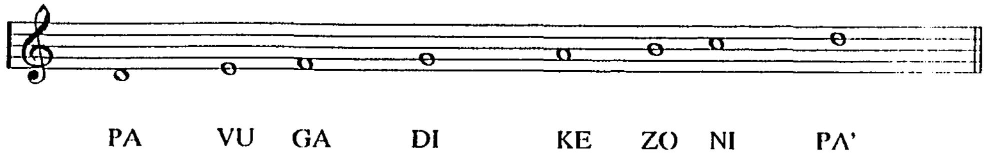
[76] Hugo Riemann. *Handbuch der Musikgeschichte,* Erste Band II Teil. (Leipzig: Breitkopf & Hartel, 1920), 77,79.

Byzantine Solmization	PA	VU	GA	DI	KE	ZO	NI
Guidonian Solmization	RE	MI	FA	SOL	LA	SI	UT (DO)
	D	E	F	G	A	B	C



In the first chapter, the ancient Greek modal scale was described as being based on a system of tetrachords, and the western ecclesiastic modes and the major and minor scales on a system of a pentachord plus a tetrachord.

Byzantine modal scales are formed from four different systems, described in 1906 by J. B. Rebours.[77]

1. The Diphonic system is based on the succession of two unequal interval units, in which the position of the smallest tone (minor 2nd) is consistently first, and the size of the larger unit alternates between major and minor thirds:

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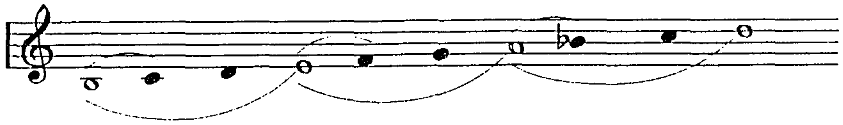
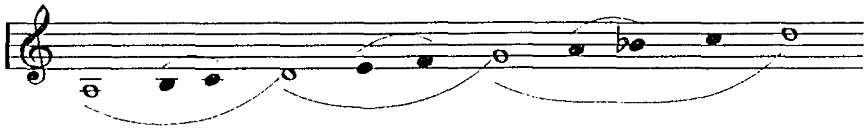
[77] J. B. Rebours. *Traité de psaltique. Théorie et pratique du chant dans l'Église greque,* (Paris, 1906), 38-42, 106.

2. The Triphonic system is based on a sequence of tetrachords, (three interval units). There are three variants of this system:

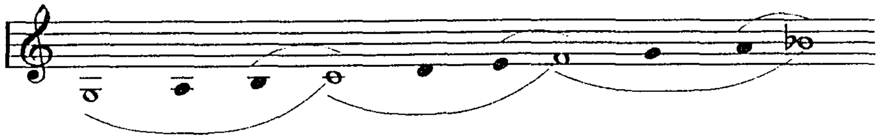
a) with the smallest tone as the first interval of the tetrachord,



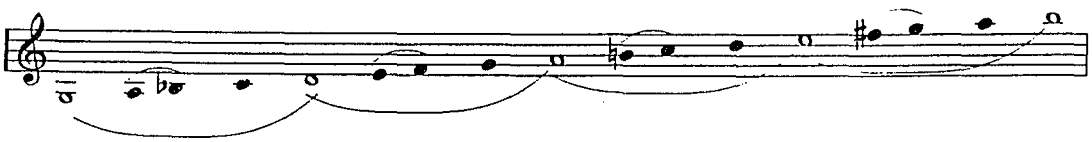
b) with the smallest tone as the second interval of the tetrachord,



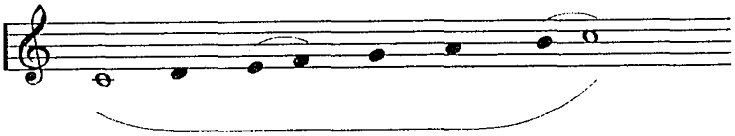
c) with the smallest tone as the third interval of the tetrachord.



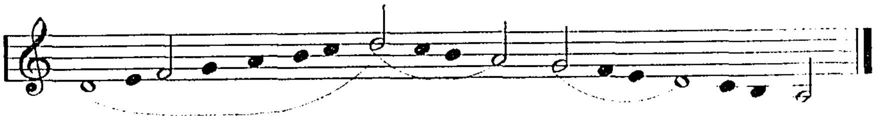
3. The Tetraphonic system is formed by successive pentachords, the smallest tone consistently being the second interval. The Byzantines suggestively named it "the system of the Wheel." This system is used in melodic modulation, technique that will be described in Chapter 3:



4. Diapason system contains eight sounds and seven intervals:



The only exception from the systems mentioned above is the descending scale of Mode 1, which is bases on the Greek system of two tetrachords connected by *diazeuxis*.



Functions of Scale Degrees in Byzantine Modes

Pitches of a Byzantine modal scale are essentially hierarchically functional. The primary functions are represented by the 1) modal fundamental, 2) the modal dominant, 3) the subtone, 4) the cadential pitches, and 5) the final cadential pitch.

The modal fundamental is generally equivalent to the tonic in western tonal music. Al off the tones gravitate toward this pitch, through melodic formulae and cadences. In Byzantine music the position of the modal fundamental is not always located on the first degree of the scale, and also, the chant does not always end on the modal fundamental. Internal cadences and even the final cadence can occur on other degrees of the modal scale. The position of the cadential pitches is related to the system on which the modal scale is based (diphonic, triphonic, tetraphonic). In addition, Byzantine music places the fundamental pitch in one fixed register and does not assume octave equivalence for that pitch.

I am borrowing the term dominant from tonal music because Byzantine theory has no equivalent terminology. The modal dominant does not have any tonal or harmonic implication, but represents a secondary element for melodic polarization. The position of the modal dominant is not fixed, as in western modal or tonal music, but is specific for each mode according to the particular structural characteristics of the mode, i.e., the system on which the modal scale is based (diphonic, triphonic, tetraphonic, or diapason). Another particular aspect of the Byzantine modal tradition is that in some circumstances, during the enfolding of a single melody, the function of the modal dominant can be taken by two different pitches. These modes are identified as having a double dominant.

Generally, the final pitch in a Byzantine chant coincides with the modal fundamental, but occasionally, unlike the *vox finalis* from *cantus planus*, it can be found on other pitches. The specific identity of these different final pitches relates to the system on which the particular modal structure is based.

The subtone, corresponding to the *subtonium modi* from *cantus planus*, is the scale degree inferior to the modal fundamental, only in the modes where the interval is a large tone, that is of 12 degrees in the octave division of Madytos and 4 degrees in the octave division of Anton Pann.

The subtone is essential for the cadencial formulae of Modes 1, 2, 4, 5, and 6. Occasionally the subtone-modal fundamental relation is featured at the beginning of a chant. This occurs particularly in the melodic formulae of Mode 5. The cadential function of the subtone involves only the sound directly below the modal fundamental, and does not apply to the notes one octave above or below.

All the other pitches have secondary function. Their role is to connect and ornament the primary functional sounds. The melodic relationships between the sounds which have a primary function and the sounds with only secondary function may be classified as passing tone, appoggiatura, escape tone and neighbor tone.[78] The general characteristics of these relationships are similar to their western counterparts from which their names have been borrowed, with the difference that in Byzantine music there is no harmonic implication.[79]

The lowest pitch in the graphical representation of a modal scale has a purely theoretical function. If this sound does not coincide with the modal fundamental, than it has no real function other than to show the traditional limits of the melodic ambitus (range) for melodies in that mode. This is however, not a strict limit and the actual melody of the chant can occasionally extend below the lowest pitch of the modal scale. If this pitch coincide with the modal fundamental, the ambitus is usually extended by the subtone or occasionally by the lower neighbor tone ornamentation of the subtone.

---

[78] I am once again borrowing terms (passing tone, appoggiatura, escape tone, neighbor tone) from tonal music because Byzantine theory has no equivalent terminology.

[79] In western music these voice leading relationships are also known as non harmonic tones.

Melodic Formulae and Cadences

Melodic formulae are the melodic contours which connect the principal functional pitches of the mode. Although the particular size and detailed shape of the formulae for any given mode can vary, all of the formulae for a particular mode will generally follow a similar pattern. Each formula has three distinct parts: beginning, melodic inflection, and closure, which corresponds to *initium, mediatio* and *terminatio* from Gregorian chant. The beginning establishes the identity of the modal fundamental (on rare occasions the modal dominant). The melodic inflection waves between the modal fundamental and the modal dominant (or dominants) creating a balanced emphasis on pitches with primary function. The closure of the formula leads back to the modal fundamental or to another cadential pitches. It is comprise of the last pitch of the formula and the preceding note (and possibly its ornamentation) which prepares it. The last note of a formula can be approached from above by a appoggiatura, from below by the subtone, by repetition, or directly entered.

The construction of melodic formulae in Byzantine chant is based on compositional techniques commun to many musical traditions including western tradition, for instance the melodic repetition, variation, improvisation, and centonization.[80]

Examples 2-1, 2-2, and 2-3[81] are typical melodic formulae for Mode 1. I will use throughout this analytical study a pseudo-notational system in which the whole note represents the modal fundamental, the half note represents the modal dominant (or dominants) and the structural pitches of the system on which the modal scale is based, the quarter note represents the subtone, and the black note heads represent the secondary functions (passing tone, appoggiatura, escape tone and neighbor tone).

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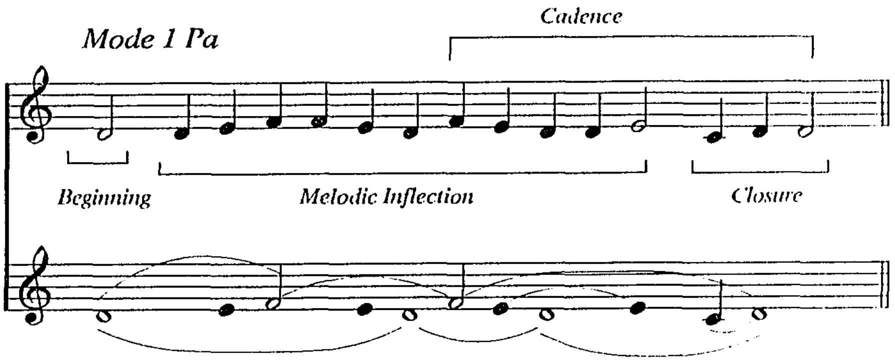
[80] The creation of a melodic formula, melodic line or of an entire work from preexisting elements.

[81] From I. Popescu-Pasarea. *Cintarile vecerniilor pe cele 8 glasuri*, (Bucharest: Tipografia "Doina Neamului", 1924), 3-4.

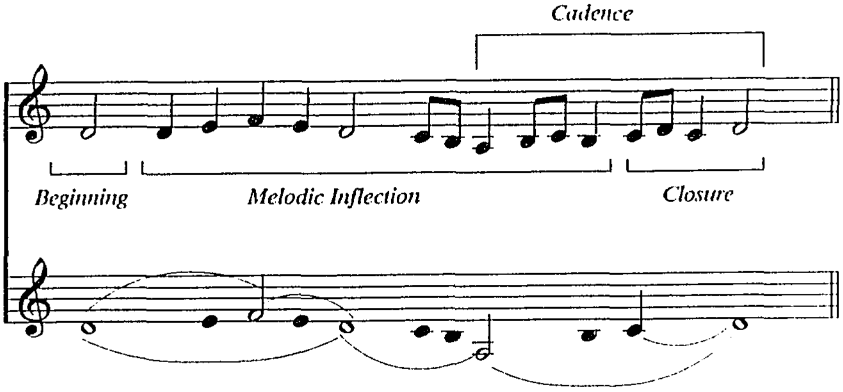
Example 2-1 begins with the modal fundamental Pa (D), reaches the modal dominant Ga (F) and descends to the modal fundamental. The closure of the formula utilize the subtone-fundamental relationship

Example 2-1



Example 2-2 again begins with the modal fundamental Pa (D), reaches the modal dominate Ga (F), descends below the modal fundamental and ends with the subtone-fundamental relationship. The analysis of this formula represents Ke (A) below the fundamental with a half note, which implies a principal function equal in importance to the modal dominant. This is explained by the peculiar structure of Mode 1. The ascending scale of this mode is based on the Diapason system, but the descending scale is based on the on the conjunction of two tetrachord Pa'--Ke, Di--Pa, connected by *diazeuxis*[82]. Therefore, Ke below the fundamental becomes a pitch with primary function.

Example 2-2



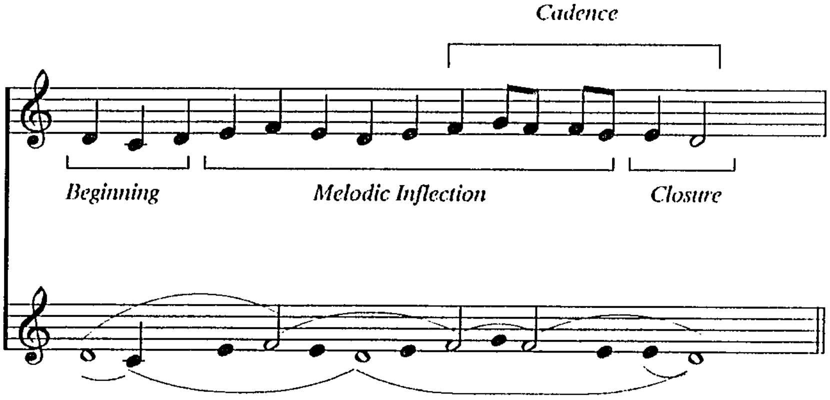
Example 2-3 begins with the relation fundamental-subtone-fundamental (Pa-Ni-Pa), ascends to the dominant Ga, descends to Pa, ascends again to Ga, and descends for the closure. Instead of the subtone, an ornamental appoggiatura[83] on the upper neighbor tone Vu precedes the modal fundamental Pa.

---

[82] The descending scale of Mode 1 is the only reminiscence of the Greek systems of modal scale formation.

[83] This pitch can not be labeled as an accented passing tone because: 1. It does not connect two pitches in step wise motion but it is rather a repetition of the preceding pitch, 2. It also can not be considered a continuation or division of the preceding note (which is a passing tone) because it is clearly a part of a new melodic unit (the closure) and carries a new melodic accent.

Example 2-3



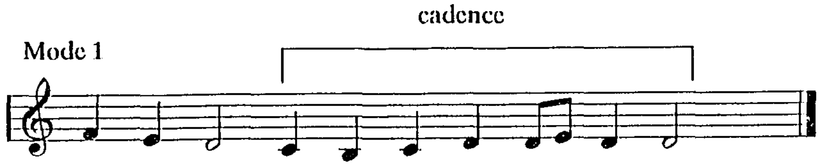
Example 2-3 shows that the melodic cadence is not the same with the closure of the melodic formula. While the closure of the formula represents the final pitch and its preparation, the cadence always represents the last stepwise motion connecting the principal functional sounds of the mode. In Byzantine music there are two types of cadences: perfect or conclusive and imperfect or inconclusive. There are three criteria regulating the use of perfect or imperfect cadences. The same criteria can be used to distinguish between a perfect and an imperfect cadence.

1. The first criterion requires that a perfect cadence be placed at the end of a sentence, or of a part of a sentence which has a complete and independent meaning. Conversely, an imperfect cadence is placed at the end of a of a part of a sentence, or even at the end of a sentence which is essentially

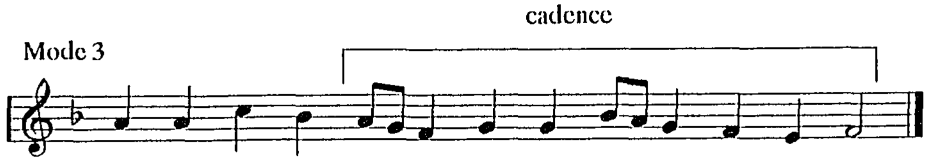
dependent for its meaning to the text that follows. To illustrate this principle I propose a paraphrased text from Psalm 106. "Praise ye the Lord for His mercy." A simple analysis reveals that the text can be divided into two parts that can be described as the action--"Praise ye the Lord . . ." and the reason for this action--". . . for His mercy." Making the asumption that this text is used for a Papadike chant, there are two possible cadences. The first cadence ends on the word "Lord" and is an imperfect cadence because the meaning of the sentence is not complete. The second cadence ends on the word "mercy" and it is a perfect cadence because it is placed at the end of a sentence with a complete and independent meaning. Now let us change the text to "Praise ye the Lord, for His mercy endureth for ever." Here there are three posible cadences. The first is an imperfect cadences and end on the word "Lord." Unlike the case of the first text, the cadence on the word "mercy," can not be perfect but imperfect because the meaning of the sentence is not compleate. The third cadence ending on the word "ever" is a perfect cadence.

2. The second criterion requires that perfect and imperfect cadences have specific melodic structures. A perfect cadence always approaches the final

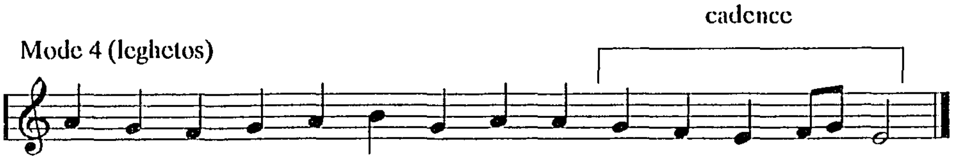
pitch by repetition, thus assurind its conclusiveness. The first statement of the cadential pitch must have a duration of at least one beat.



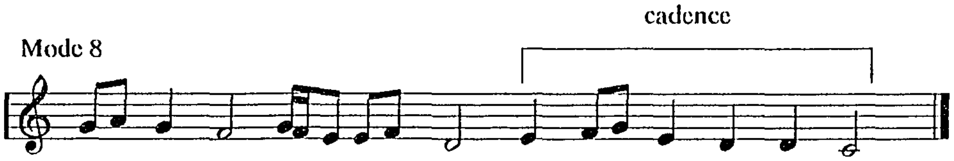
Between the two statements of the cadential pitch a neighbor tone can be intercalated.



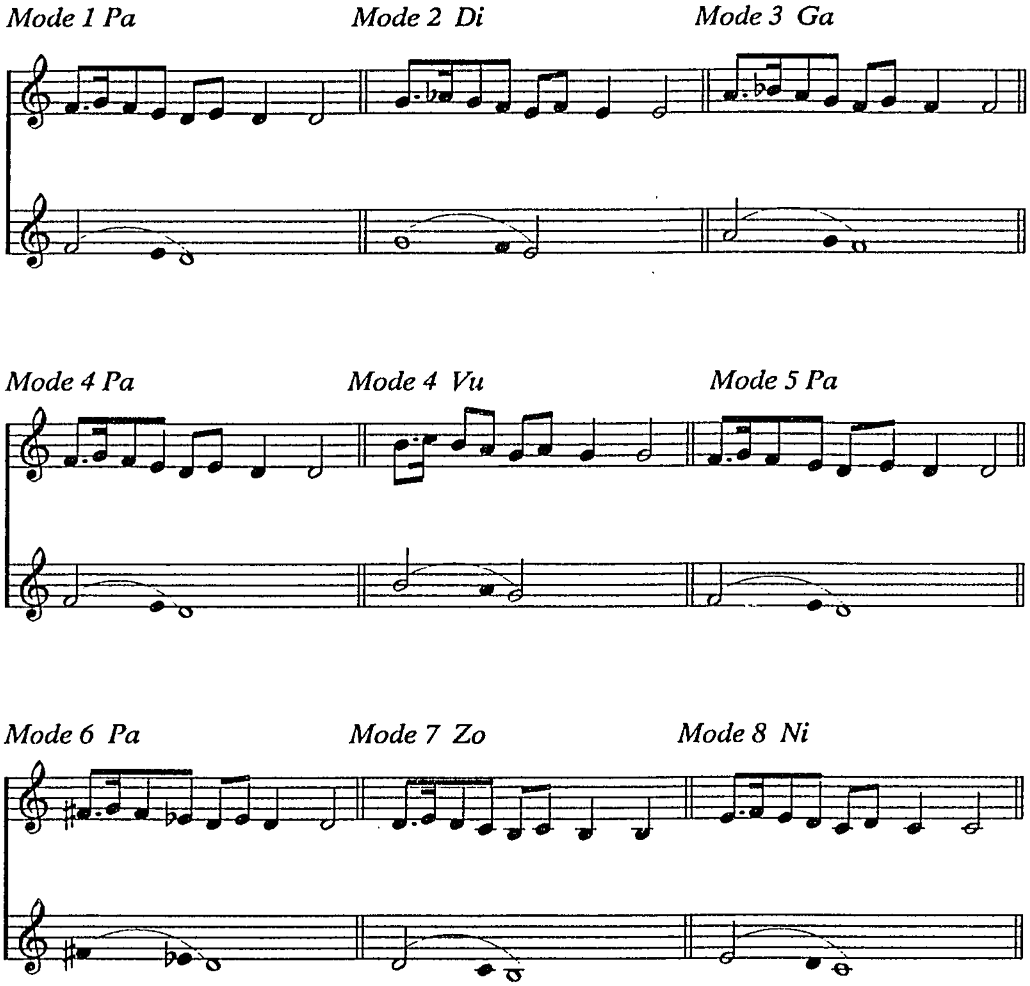
An upper neighboring tone may be ornated by its upper neighboring tone in an escape tone manner.



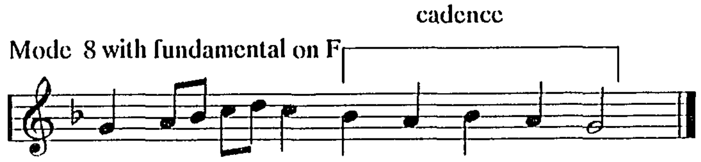
Rarely the first statement of the cadential pitch may be replaced by its upper neighboring tone which becomes an appoggiatura.

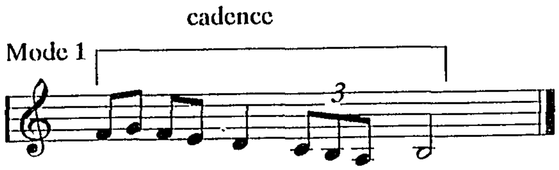


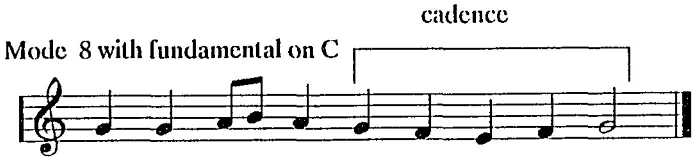
Although the shape of the final cadence could take a wide variety of forms, a particular melodic-rhythmic pattern is found very frequently. This cadence, called General Perfect Cadence (GPC), is based on a three pitch descending line with an upper neighbor tone ornamentation of the first and third notes. This pattern is used in all modes. The following diagram shows the GPC in all of the eight modes:



An imperfect cadence aproaches its final pitch in stepwise motion and avoids its repetition. Below are some of the most usual imperfect cadences.







3. Finally, the third criterion requires that perfect and imperfect cadences end on designated pitches, which are specific for each mode. The identity of these piches will be described in Chapter 4 in connection with the primary function pitches in each of the eight modes.

Intonation Formulae

The intonation formula (or tuning formula) is a short melodic passage, specific to each mode, designed to help the singers to tune to the correct pitch. At the same time the intonation formula presents a symbol of the modal characteristics, enunciating the modal fundamental, the dominant, and the most representative intervals, thus encapsulating the *ethos* of the mode. A more complete account of the specific melodic and intonation formulae and also the cadences in each modes will be presented in Chapter 4 as a part of the study of each of the individual eight modes.

The Four Idioms of Byzantine Chant

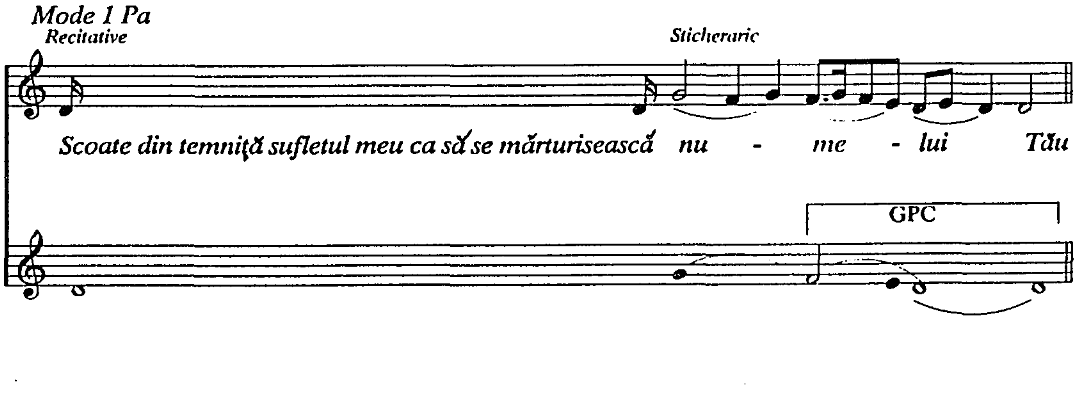
In Byzantine music the chants of the eight modes are diversified into four idioms: Recitative, Hirmologic, Sticheraric and Papadike. For each of these modal idioms the melody of the chant has a distinctive configuration determined by the specific relation between music and text, and additionally by the tempo in which the chant is performed. In this section only the general characteristics of the four idioms of Byzantine chant will be studied.

The Recitative Chant

Byzantine liturgy is designed like a drama with a Biblical subject. The Recitative with its rhetorical character is used in those sections of the liturgy where a clear enunciation of the text is required. It has a declamatory, dramatic, and solemn character midway between recitation and singing. Specifically the Recitative is used for the reading of liturgical texts like Psalms and Gospels, and for the antiphonal dialog between the principal officiant of the service and the cantor or choir. In shorter passages, the Recitative is often used as an introduction to chants in one of the other idioms. There are two subtypes of recitatives in Byzantine music.

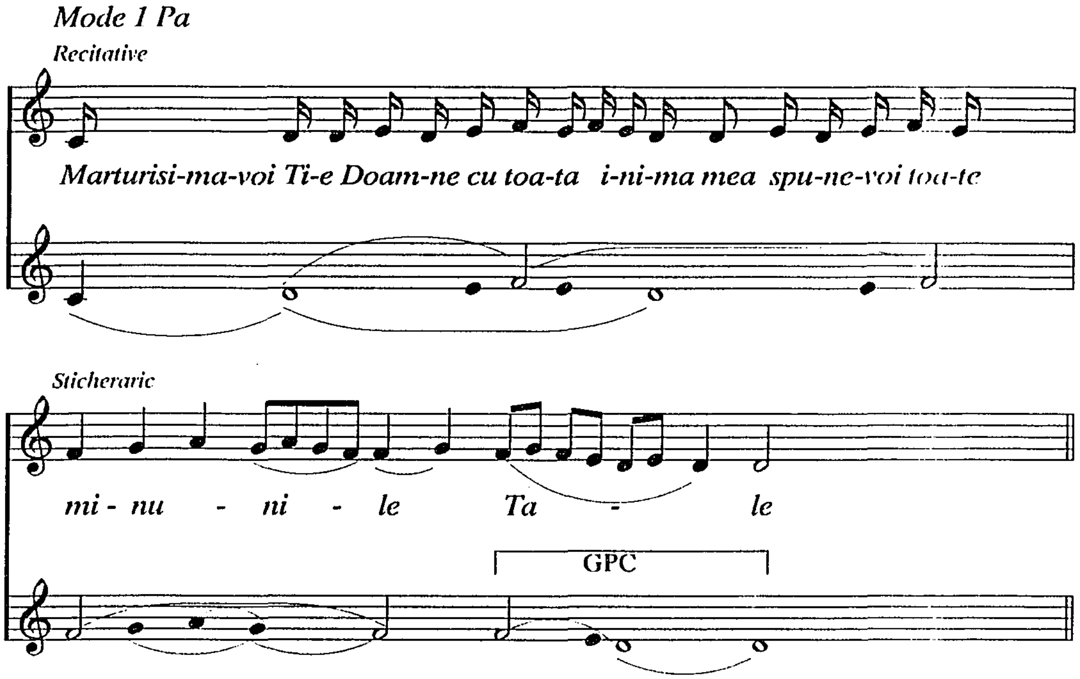
1. The pure, or strict Recitative, consists of declamatory singing of the text on a single sound. Example 2-4 in Mode 1, ends with a General Perfect Cadence (GPC) in Sticheraric idiom:

Example 2-4


Mode 1 Pa
Recitative
Sticheraric
Scoate din temniță sufletul meu ca să se mărturisească nu - me - lui Tău
GPC

2. The combined or mixed Recitative, consists of declamatory singing with some melodic inflections. In example 2-5 the mixed Recitative continues with a passage in the Sticheraric idiom, passage that ends with a GPC.

Example 2-5


Mode 1 Pa
Recitative
Marturisi-ma-voi Ti-e Doam-ne cu toa-ta i-ni-ma mea spu-ne-voi toa-te
Sticheraric
mi - nu - ni - le Ta - le
GPC

The tempo of the Recitative chant is free and in accord with a succession of syllables that occur in normal speech.

The Hirmologic Chant

There are two main characteristics of Hirmologic chant. First is the close relation between text and music. The construction of the chant in this idiom follows the principle of syllabic structure--one syllable for each sound. Rarely, the Hirmologic chant might present a melismatic structure of two to four sounds per one syllable. The second characteristic of Hirmologic chant is its lively tempo, which corresponds in western music to Allegretto. Because of the relative fast tempo, the melody remains simple, with very limited ornamentation, and uses mostly stepwise motion. Intervals of the third or fourth can follow an internal cadence after which the melody continues once more in stepwise motion. Hirmologic chant unfolds in a limited registral space that very rarely extends over the modal diapason (octave), having its highest density within an interval of the fifth of sixth. The Hirmologic chant is mainly monorhythmic. These characteristics make Hirmologic chant very appropriate for group performance. Example 5-6 in Mode 3, is a Neo-Byzantine Hirmologic chant[84] with a Romanian text.

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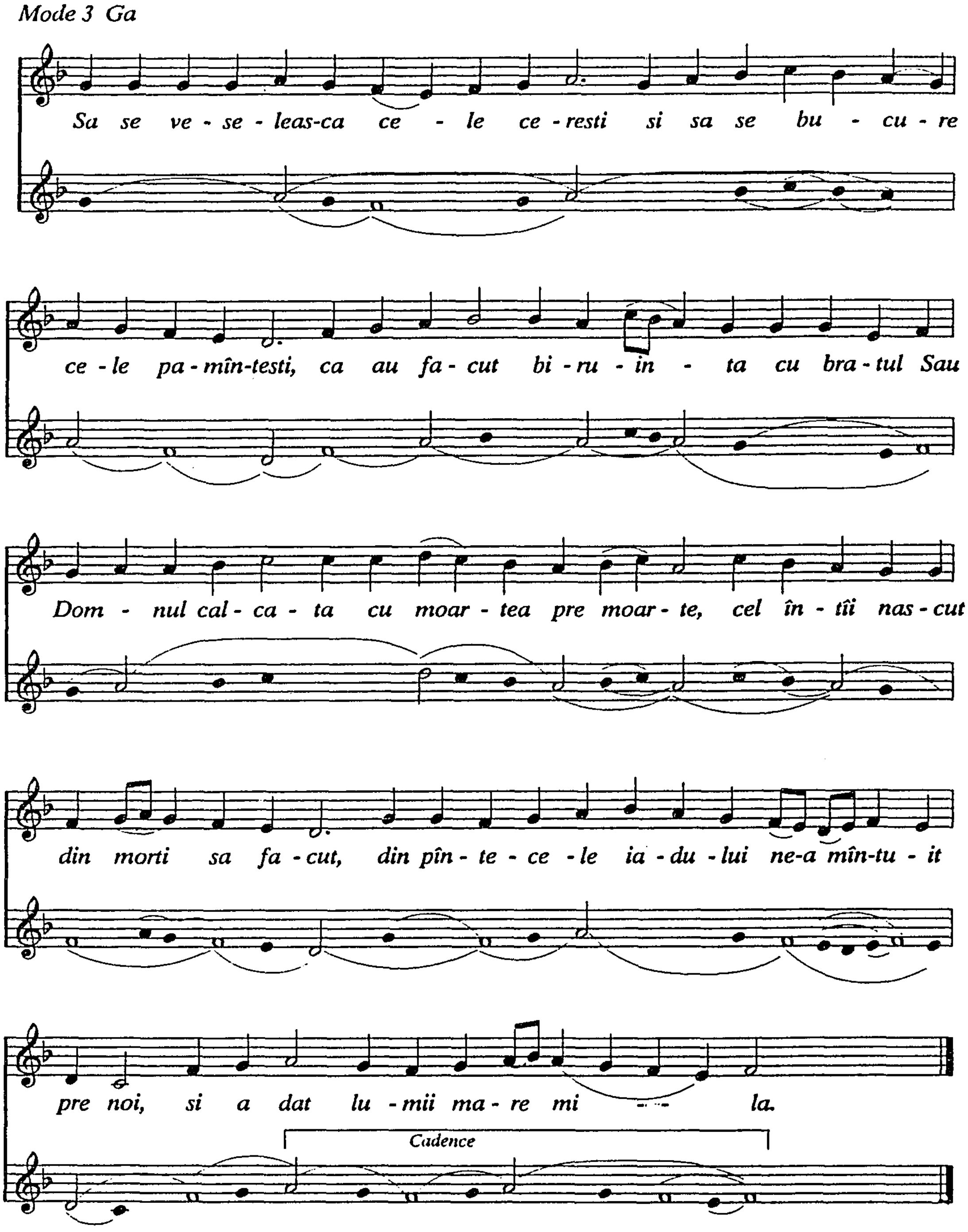
[84] Ioan Croitoru. "Tropar", in Victor Giuleanu. *Melodica Bizantina*, (Bucharest: Editura Muzicala, 1981),114.

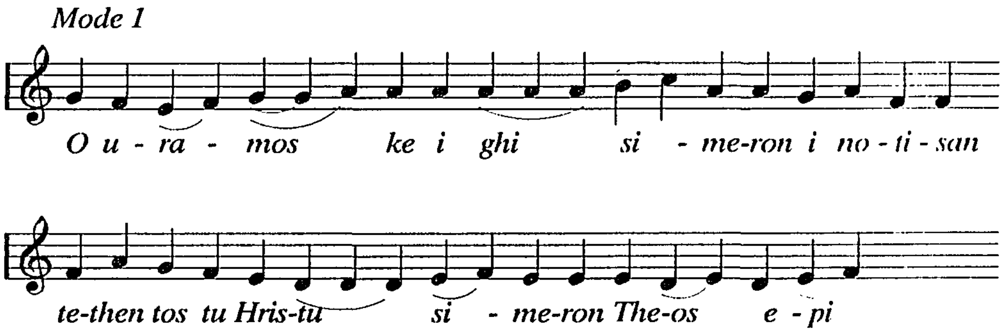
Example 2-6


Mode 3 Ga
Sa se ve - se - leas-ca ce - le ce - resti si sa se bu - cu - re
ce - le pa - mîn-testi, ca au fa - cut bi - ru - in - ta cu bra - tul Sau
Dom - nul cal - ca - ta cu moar - tea pre moar - te, cel în - tîi nas - cut
din morti sa fa - cut, din pîn - te - ce - le ia - du - lui ne-a mîn-tu - it
pre noi, si a dat lu - mii ma - re mi - - la.
Cadence

Sticheraric Chant

Designed for solo performance, Sticheraric chant is essentially lyrical. The melody, which moves in Andante tempo, describes rich ascending and descending lines which explore the tessitura of the modal diapason and even beyond. To the basic stepwise motion, occasional intervals of the third, fourth and fifth are added. The relation of text to music is characterized by a combination of syllabic and melismatic structures. Improvisatory additions to Sticheraric chant is also customary. Examples 2-7 and 2-8 reflect the evolution of Sticheraric chant. Example 2-7, from the Paleo-Byzantine Period, is attributed to John of Damask (676-756)[85] and displays a simple, monorhythmic melodic line with few ornaments.

Example 2-7


Mode 1
O u - ra - mos ke i ghi si - me-ron i no - ti - san
te-then tos tu Hris-tu si - me-ron The-os e - pi

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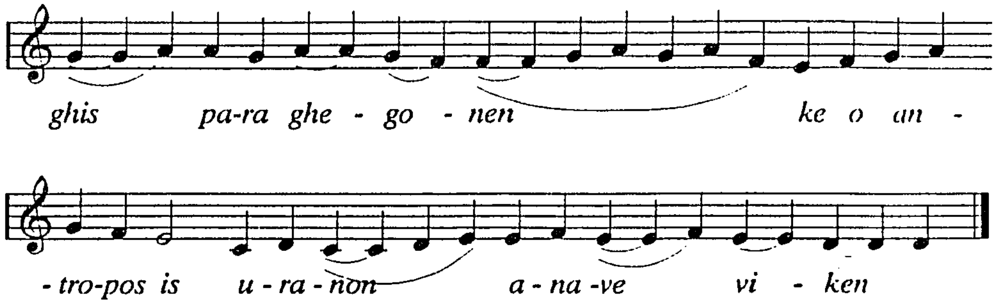
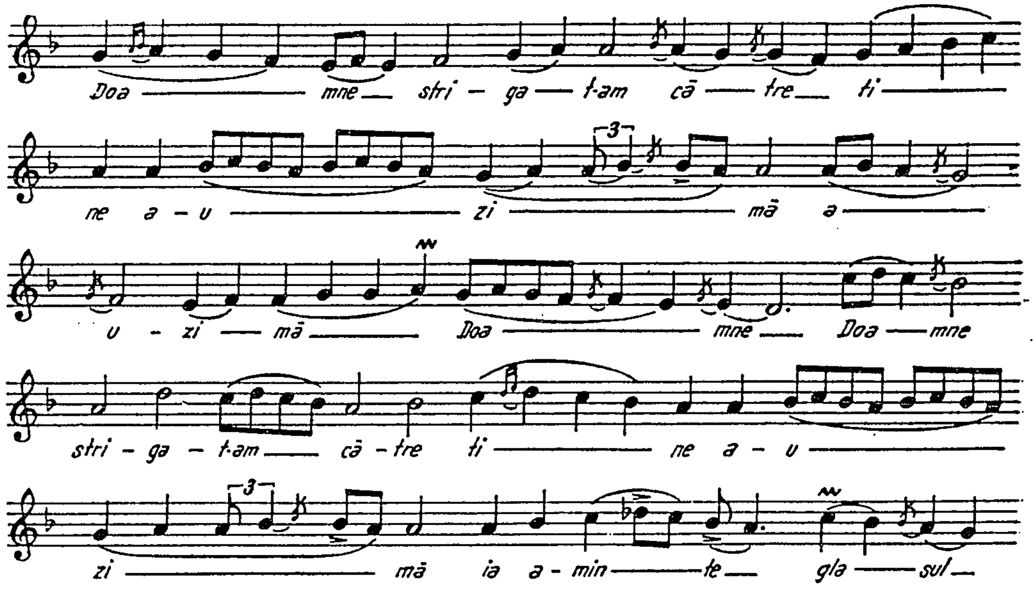
[85] Father Petrescu. *L'Office de Noël*, (Paris: Paul Geuthner, 1932), 33.


ghis pa-ra ghe - go - nen ke o an -
- tro-pos is u - ra - non a - na -ve vi - ken

Example 2-8 is from the Neo-Byzantine Period.[86] The melodic motion extends over the entire modal diapason. The melismatic passages are longer, the ornamentation richer, and the rhythm structure more variant.

Example 2-8

Mode 3 Ga


Doa mne stri - ga t-am că tre ti
ne a - u zi mă a
u - zi mă Doa mne Doa mne
stri - ga - t-am că - tre ti ne a - u
zi mă ia a - min te gla sul

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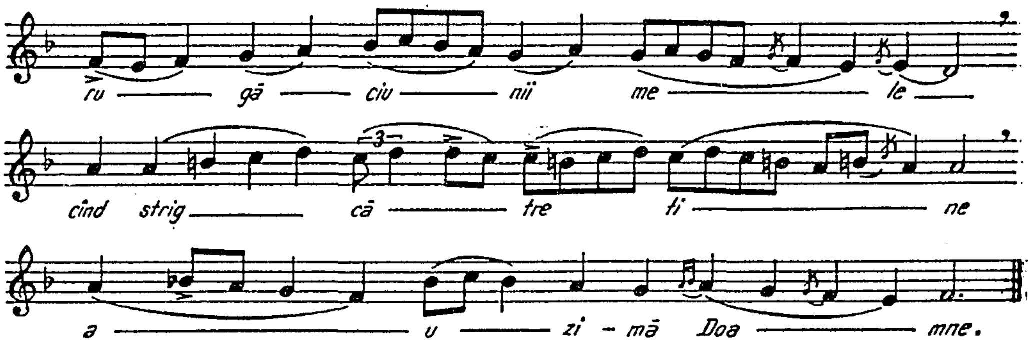
[86] Dimitrie Suceveanu. *Teoreticon*. Iasi, 1848.

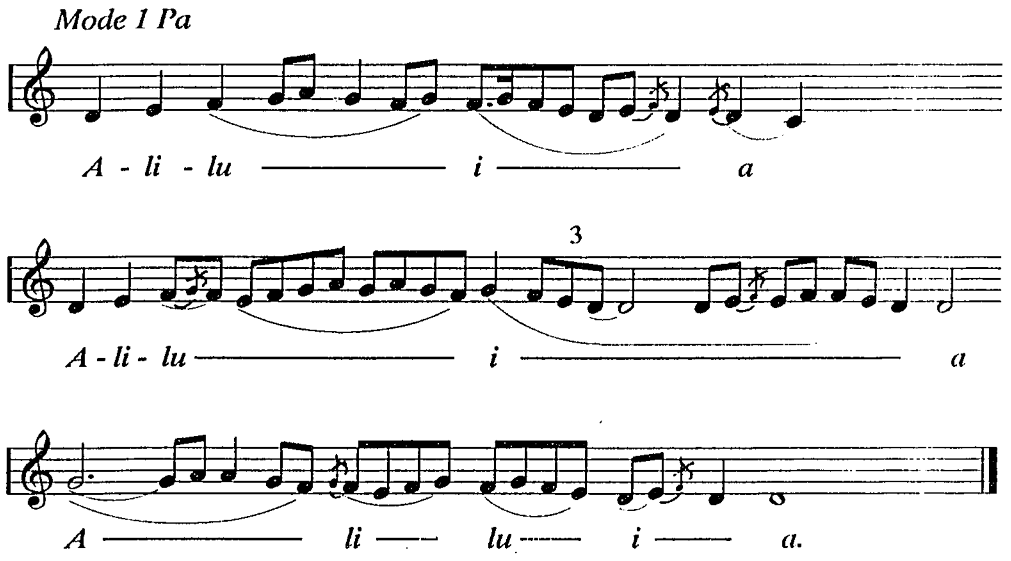

ru — gă — civ — nii me — le —
cînd strig — că — tre ti — ne
a — u — zi - mă Doa — mne.

Papadike Chant

The particular characteristic of this idiom of Byzantine chant consists of its intense melismatic character. Because of the dilution of the text during long melismatic passages, Papadike chant functions within the Byzantine Liturgy as a meditation. Most of the time the essential text or idea is presented prior to the beginning of Papadike chant through a Recitative, or it consists of a short text of an Alleluia or Kyrie Eleison type. Rich ornamentation and specific improvisatory techniques are appropriate for this type of chant which is designed for soloistic virtuosity. The tempo is slow and meditative corresponding in western music to Lento or Largo. Example

2-9[87], which is relatively short for Papadike chant, uses Alliluia for text. The final cadence is a General Perfect Cadence.

Example 2-9



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[87] Stefanache Popescu. *Colectiuni de cîntari bisericesti*. Bucharest: Tipografia Nifon, 1860, p. 43.

A Theory of Byzantine Rhythm

The notion of rhythm implies three different areas of study:

1) **Rhythm proper** with its patterns resulting from the combinations of sounds and rests of different duration,

2) **Meter**, consisting of the pattern in which successive rhythmic pulses are organized by accents,

3) **Tempo**, the degree of speed at which music is performed.

Rhythm Proper

Byzantine rhythm uses a proportional rhythm notation, in which all durations derive from a standard durational unit of one beat. The standard duration is the principal element in the organization of all rhythmic structures. In Greek theory the standard duration, called *hronos protos*[88] (prime time), was the smallest duration. All other durations were obtained through proportional augmentation of this standard unit. The Byzantines also used the *hronos protos* until the thirteenth century.[89] After the thirteenth century the standard durational unit in Byzantine chant became the central duration, all other durations being obtained through both proportional augmentation and diminution. In transcriptions of all Byzantine chants in western notation, the standard unit has been represented by the quarter note ♩, as well as by the eight note ♪. The representation of the standard unit by the eight note is used more frequently in transcriptions of Paleo and Medio-Byzantine chant where the standard unit was the smallest duration. In this study, because of its more frequent use in transcriptions of Neo-Byzantine chant, the quarter note will represent the standard durational unit which is the central duration. Neo-Byzantine notation, therefore, uses nine durational values: the standard unit, four augmented values and four diminished values.

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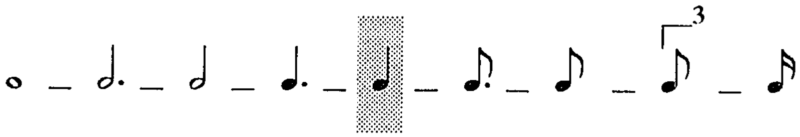
[88] Aristides Quintilianus. *On Music in Three Books*, trans. Thomas J. Mathiesen, (New Haven: Yale University Press, 1983), 70.



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[89] Father I. D. Petrescu. *Les idiomèles et le canon de l'Office de Noël*, (Paris: Paul Geuthner, 1932), 59.

Byzantine music does not use rests as part of the notational schema. Pauses result from syntactic phenomena such as caesura and the required breathing pauses at the end of text verses and melodic phrases. Rhythmic formulae are usually asymmetrical combining freely both duple and triple divisions of the standard central duration. Lacking notated rests and syncopated rhythms, Byzantine melodic lines are continuous and fluent. The rhythmic structure is subordinated to the various procedures of intonational expression. In Byzantine culture, from a semiotic point of view, melody represents the sacred and rhythm represents the secular. This explains why Byzantine chant does not use syncopated rhythm and avoids repeated rhythmic patterns and consistent metric accents. For the same reason the Byzantine chant uses only prose for text and never poetry, which would require the music to adapt to poetic rhythm and rime.

Meter

In Byzantine music the system of metric accents was modeled after the patterns of rhythmic pulses used in antique Greek poetry. To the Greeks music, dance and poetry were branches of the same art. The element of liaison between them was rhythm. The basis for the formation of all Greek rhythm was the combination of long and short syllables. The elementary unit of rhythmic meter was called *pous*[90] (foot). The disyllabic and trisyllabic prosodic feet are simple metric units. Combination of disyllabic and/or trisyllabic feet results in compound metric formulae (tetrasyllabic, pentasyllabic, etc.). In music, different metric units were obtained through combinations of *hronos protos* (assigned to short syllables) and its augmentations (assigned to long syllables). A revival of Greek poetical and musical meter based on the system of long and short note duration was initiated by Jean Antoine de Baïf who founded in 1570 the *Académie de poésie et musique.* He and his followers established a French analogue for the classical meter called *vers mesurés à l'antique.* The long and short syllables of their poetry was set to music by note values in the ratio 2:1, and in syllabic and homorhythmic style, which was called *musique mesurée à l'antique.* The aim of this French style of the late sixteenth century was to reestablish the intimate relation between music and poetry and, thus, the power of music to move the listener as reported in classical antiquity.[91]

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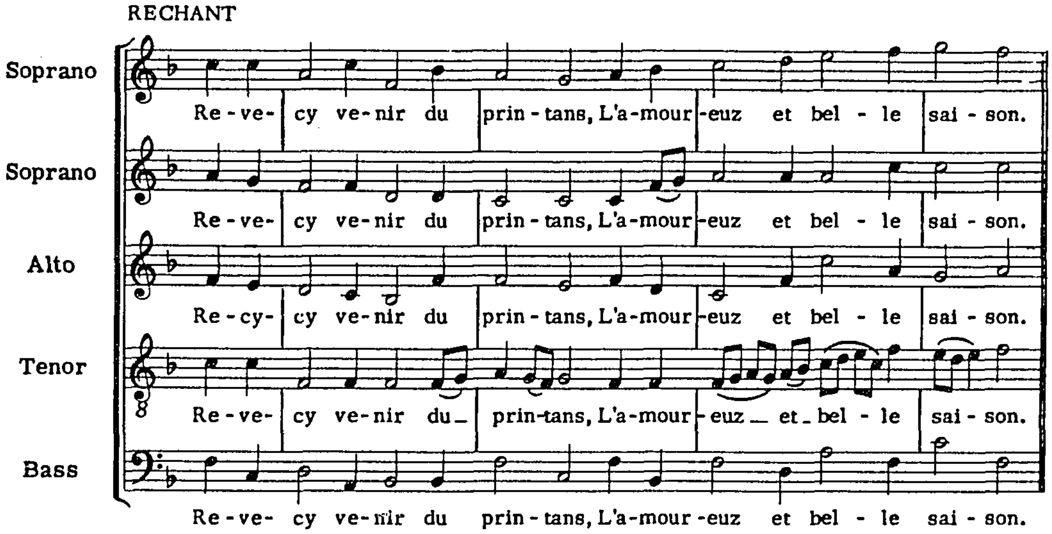
[90] In Greek = foot, step

[91] "Musique mesurée" in *The New Harvard Dictionary of Music*, ed. Don Randel (Cambridge. Massachusetts: The Belknap Press, 1986), 523.

Example 2-10 is an excerpt from a *Chanson mesurée*, composed by Claude Le Jeune[92] (published in 1602), who is perhaps the best known composer of this style.

Example 2-10


RECHANT
Soprano
Soprano
Alto
Tenor
Bass
Re - ve- cy ve- nir du prin - tans, L'a-mour -euz et bel - le sai - son.
Re - ve- cy ve- nir du prin - tans, L'a-mour -euz et bel - le sai - son.
Re - cy- cy ve- nir du prin - tans, L'a-mour -euz et bel - le sai - son.
Re - ve- cy ve- nir du_ prin-tans, L'a-mour - euz_ et_ bel - le sai - son.
Re - ve- cy ve- nir du prin - tans, L'a-mour -euz et bel - le sai - son.

Even from its very inception in the fourth century, the Byzantines changed the system of long and short syllables into stressed or accented and unstressed or unaccented syllables. The credit for adapting the Greek poetical rhythms to the needs of the mostly monorhythmic Paleo-Byzantine chant has been attributed to the poet-musician Efraim of Syria (306-373). Composers of Medio-Byzantine chant and Neo-Byzantine chant used both systems, long and short and accented and unaccented, for the formation of musical metric units. Recitative and Hirmologic chant predominantly use the system of accented and unaccented, while the Sticheraric and Papadike chant use equally the long and short units with the accented and unaccented ones.

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[92] Claude Le jeune. "Revecy venir du printans" in *Choral Music, A Norton Historical Anthology*, ed. Ray Robinson (New York: W. W. Norton and Co. 1978), 220.

For the purposes of rhythmic analysis the accented or long syllable will be represented by the sign —, and the unaccented or short syllable by the sign ∪ .

There are then four disyllabic metric units (feet):

1. *Trochaios* -- trochee, consisting of a stress or long syllable followed by an unstressed or short one (— ∪),
2. *Iambos* -- iamb, consisting of an unstressed or short syllable followed by a stress or long syllable (∪ —),
3. *Spondeus* -- spondee, consisting of two stress or long syllables (— —),
4. *Pyrrhichius* -- pyrrhic, consisting of two unstressed or short syllables (∪ ∪).

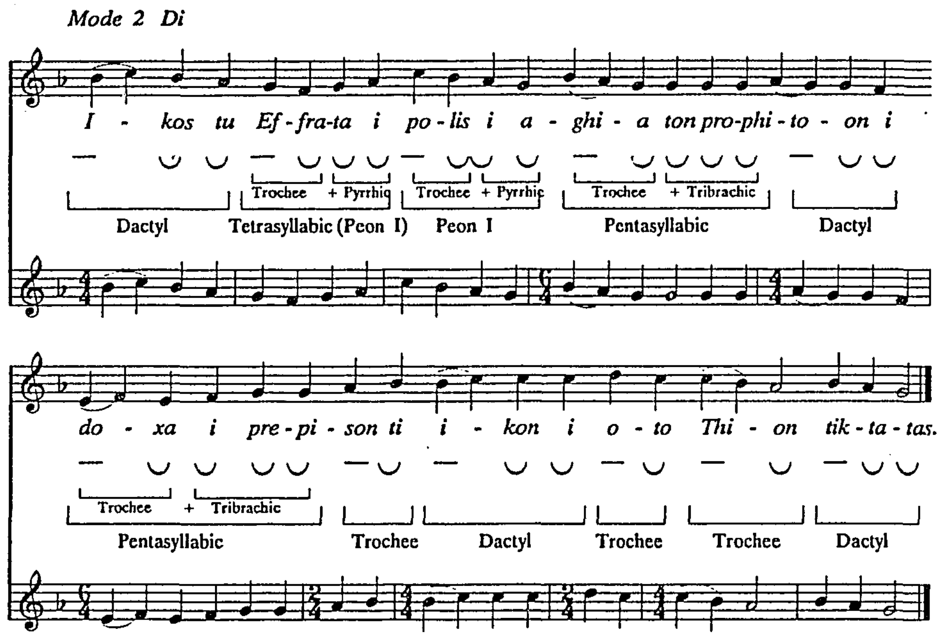
There are eight trisyllabic feet: Dactyl, Anapest, Brachic, Amphybrachic, Tribrachic, Cretic, Bachic, and Antibachic. The following trisyllabic feet are the most frequent used.

1. *Daktulos* -- dactyl, consisting of one stress or long syllable followed by two unstressed or short syllables (— ∪ ∪),

2. *Anapaistos* -- anapest, consisting of two unstressed or short syllables followed by a stress or long syllable (∪ ∪ —).

The analysis of Example 2-11[93], a Hirmologic chant in mode chromatic 2, reveals the rhythmic organization based on prosodic feet.

Example 2-11



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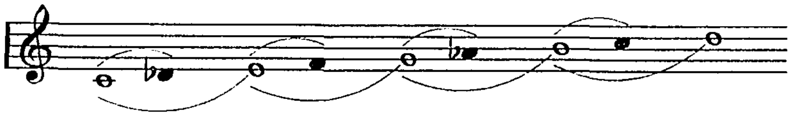
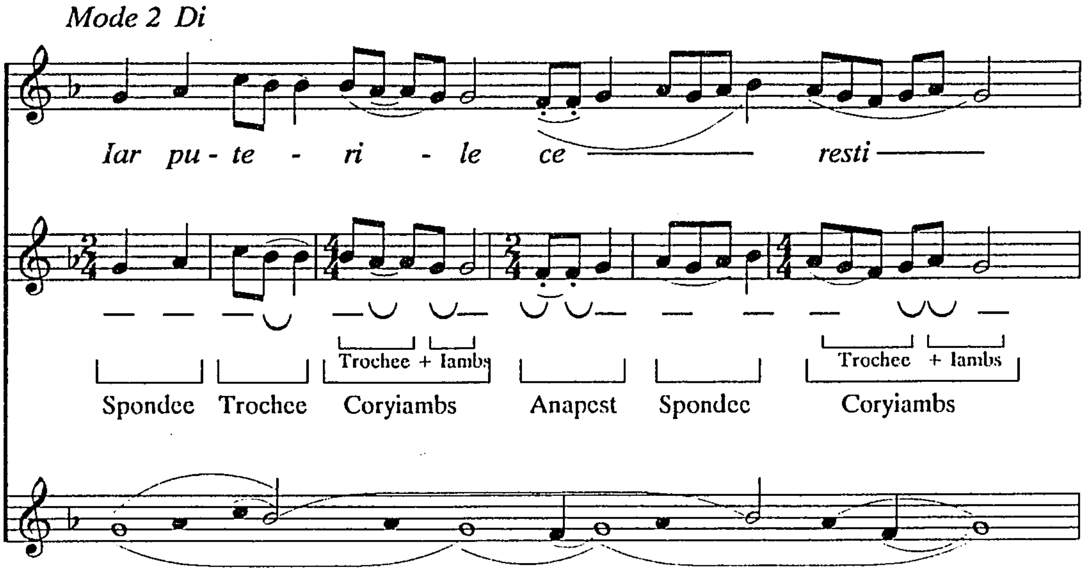
[93] Dimitrie Cutavas. "Ikos tu Ephrata", in Victor Giuleanu. *Melodica Bizantina* (Bucharest: Editura Muzicala, 1981), 68.

Representation of meter in transcriptions of Byzantine chant into western notation accounts for each accented syllable of text as the beginning of a musical measure of shifting meters. In melismatic passages of the Sticheraric and Papadike chant, the metric units are not established by prosodic feet but by melodic accents. If the accented syllables of the text are established by the rules of speech specific for each language, the choice of accented sounds in melismatic passages requires the expertise of the Byzantine performer. Although a certain degree of freedom exists, the choice of accented sounds takes into consideration the duration as well as the function of the different pitches. A pitch with longer duration will always receive an accent unless it is preceded by an appoggiatura. Pitches with primary function (modal fundamental, modal dominant, cadential pitches, subtone) will also carry an accent, unless preceded by an appoggiatura. Pitches with secondary function that can carry an accent are the appoggiatura, and the passing tone when it has a relatively long duration, one longer than the primary function sounds. Example 2-12 is a fragment from a Papadike chant in Mode 2. The construction of the modal scale in this mode is based on the Diphonic system.



The modal fundamental and final sound is Di (G). The modal dominant is Zo (B), and the cadential sounds for imperfect cadences are Vu (E), Zo (B) and Ni (C). Perfect and final cadences occur on the modal fundamental Di (G) and occasionally on Vu (E).

Example 2-12



The same analytic technique was applied to melodic lines in western instrumental music by Cooper and Meyer.[94] Examples 2-13 to 2-16 are short excerpts from well-known masterpieces of western music. Their rhythmic analysis reveal the existence of metrical units similar to the prosodic feet.

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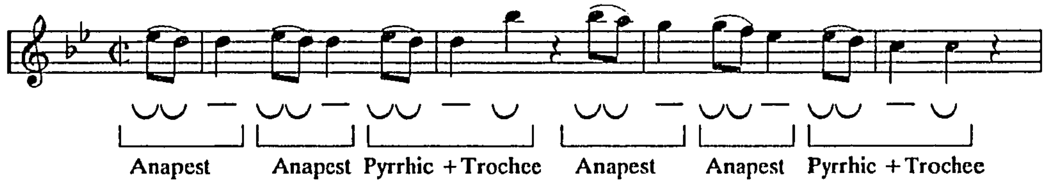
[94] Grosvenor W. Cooper and Leonard Meyer, *The Rhythmic Structure of Music* (Chicago: The University of Chicago Press, 1960).

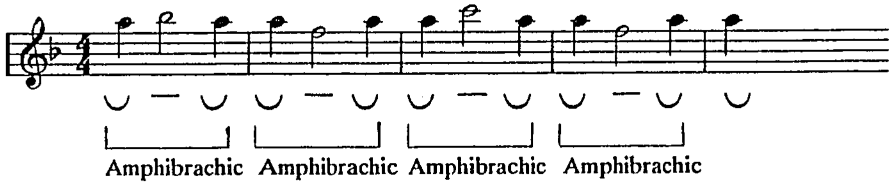
Example 2-13

W. A. Mozart — Symphony No. 40



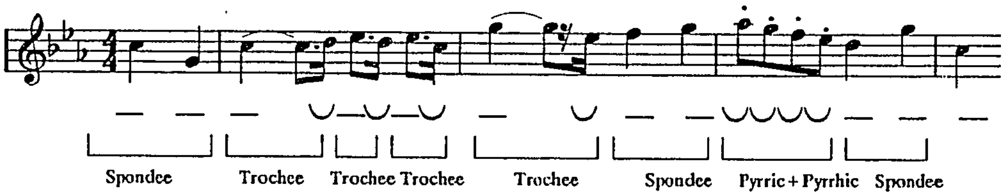
Example 2-14

C. Franck — Symphony in D Minor



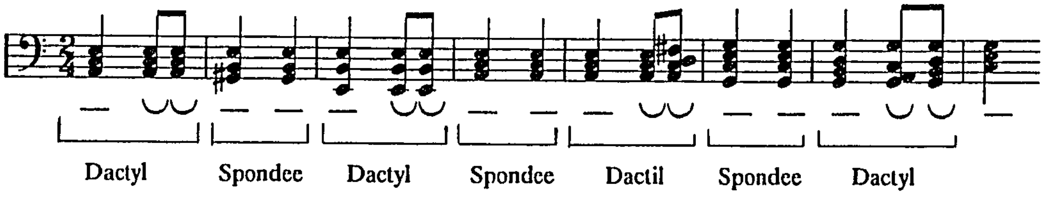
Example 2-15

G. Bizet – L'Arlésienne



Example 2-16

L. v. Beethoven — Symphony No. 7



Historic accounts of the traditional conducting practices in Byzantine music,[95] as well as contemporary conducting techniques, reveal that the Byzantines regard the metrical units derived from prosodic feet as a form of hypermeter. The elementary and general metric unit is the measure of one standard durational unit (represented in our study by the quarter note). This durational unit is showed by the basic conducting technique consisting of the uniform tactation of the hand falling and rising motion. The same conducting technique was practiced in western music of the fifteenth and sixteenth century where one tactus was equal to the value of a semibrevis.

Tempo

In Byzantine music there are four general types of tempo, corresponding to the four idioms of Byzantine chant. The graphic notation establishing the idioms also sets the appropriate tempo. In the manuscript of late Pale-Byzantine and Medio-Byzantine Periods, the graphic sign consisted of letter X (corresponding in Greek to H for *Hronos*) with a temporal neume above. In the Neo-Byzantine Period letter T (for tactus) is also used for the notation of tempo. For Recitative idiom and tempo the neume above *Hronos* was the double gorgon (or digorgon) -- T.

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[95] Anton Pann. *Prescurtare din bazu muzicii bisericesti si din Anastasimatar*, (Bucharest: Intru a sa tipografie de muzica bisericesaca, 1847), 9.

For Hirmologic chant the neume above *Hronos* was the Gorgon -- T.

For Sticheraric chant the neume above *Hronos* was the Argon -- T.

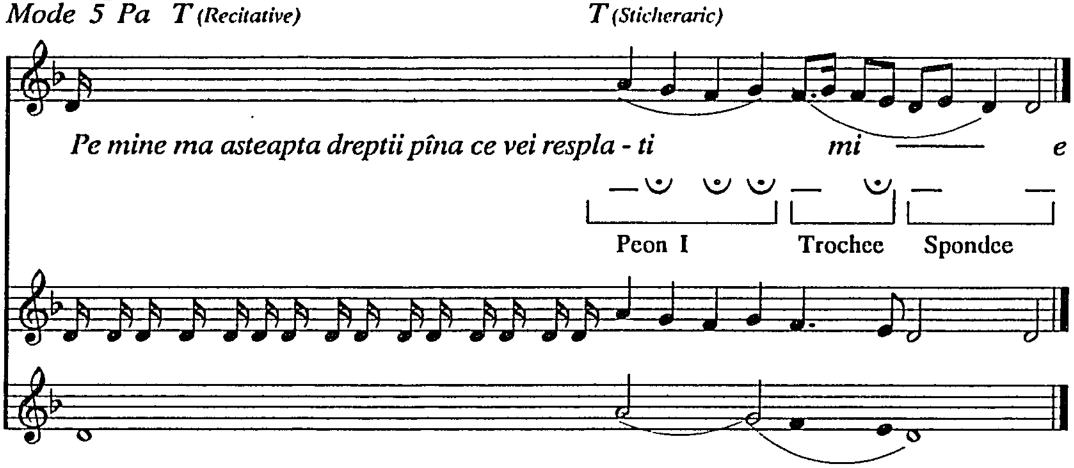
For Papadike chant the neume above *Hronos* was the Diargon -- T.

The individual significance of these temporal neumes will be presented in Chapter 3.

The tempo of Recitative chant is a free movement at the speed of normal speech, with agogical variation of a rubato type. Syntactic rests are present for breathing purposes and for a clear underlining of the meaning of the text. There are two variants of tempo in Recitative chant related to the two types of Recitative (strict and mixed). In Strict Recitative the tempo is faster and agogically irregular. In Mixed Recitative the tempo is slower and more regular, adapting to melodic inflections.

Most of the Recitatives end with a cadence in another idiom. Example 2-18 is a Strict Recitative in mode 5 ending with a GPC in the Sticheraric idiom. In Byzantine semiography, for Strict Recitative, only the first sound is notated with an intonation neume, after which the text continues alone. It is understood that the declamation will continue on the same pitch until a new sign establishes a new pitch.

Example 2-17



The tempo in Hirmologic chant corresponds to an Allegretto from western music with a M.M. ♩ = 80-90. The monorhythmic and syllabic character of Hirmologic chant requires a stable and regular tempo, with minimal agogic variations. The tempo in Sticheraric chant is similar in character and movement to the Andante and Moderato from western music with a M.M. ♩ = 60-70. If there is no tempo marking at the beginning of a chant it is understood that the tempo to be is that of Sticheraric chant.

The tempo in Papadike chant is similar to the Largo, Lento or Adagio indications from western music with a M.M. ♩ = 40-54.

CHAPTER 3

BYZANTINE MUSICAL SEMIOGRAPHY

A Short History of Byzantine Musical Semiography

During the Paleo-Byzantine Period, two systems of musical signs were utilized.

1. A system of ecphonetic signs was introduced at the end of the fifth century and appeared to be fully developed in manuscripts by the eight century. These signs were added to the text in order to clarify the structure of the sentence and to guide the recitation of liturgical text, especially those from the Bible. They are comparable to punctuation marks in present day grammar. Some of these signs represented accents, breathing rests, or a rising and falling of the voice. The number of signs and their shape were maintained practically unchanged from the eight to the thirteenth century, when the consistency of the ecphonetic system of signs started to disintegrate. By the fourteenth century, the meaning of these signs became obscure and the system was eventually abandoned.[96] The precise musical

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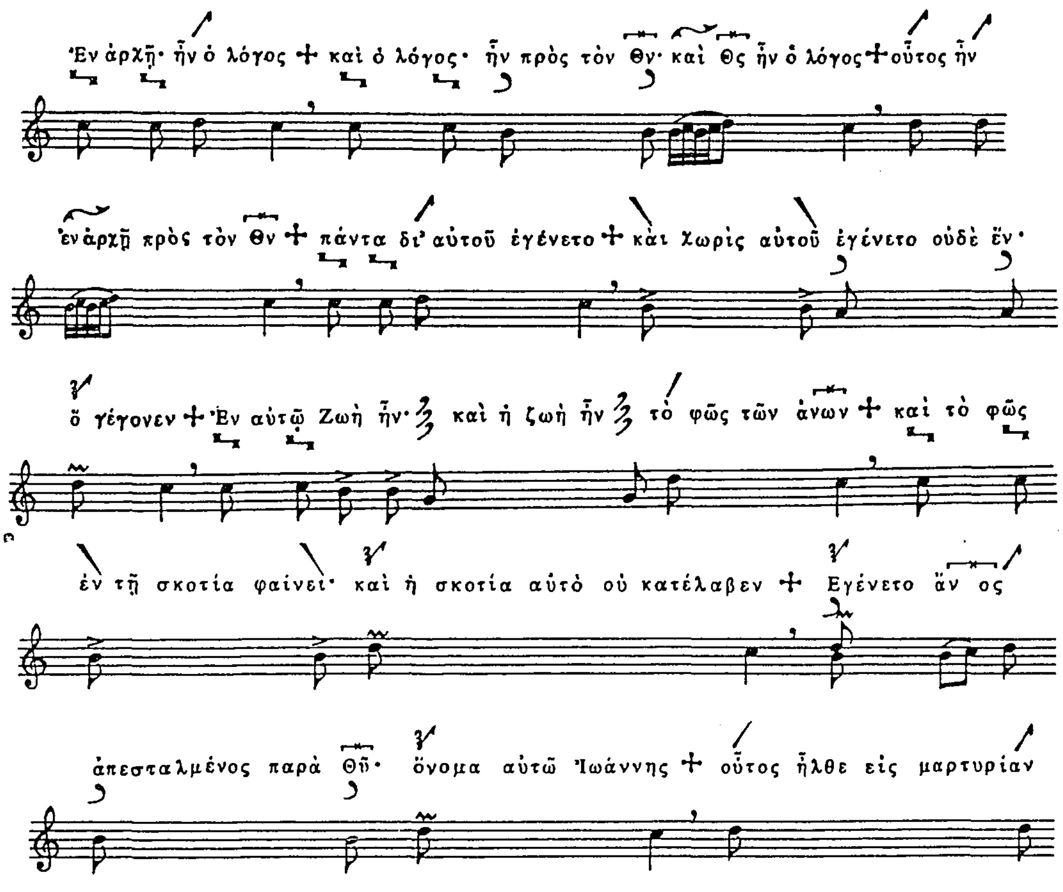
[96] Egon Wellesz, *A History of Byzantine Music and Hymnography* (Oxford: Claredon Press, 1961), 127. citing Carsten Hoeg, "La notation ekphonétique", MMB, Subsidia I. 2. (Copenhagen,1955), 137.

significance of the ecphonetic signs is unknown, but in general their meaning can be reconstructed by observing the recitation of the same texts in today's liturgy. Example 3-1 is a transcription of an excerpt from the *Greek Ecclesiastic Lexicon*,[97] a manuscript from the eighth century. The text of this excerpt is from the Gospel of John 1:1-17.

Example 3-1


Ἐν ἀρχῇ· ἦν ὁ λόγος + καὶ ὁ λόγος· ἦν πρὸς τὸν Θν· καὶ Θς ἦν ὁ λόγος + οὗτος ἦν
ἐν ἀρχῇ πρὸς τὸν Θν + πάντα δι' αὐτοῦ ἐγένετο + καὶ χωρὶς αὐτοῦ ἐγένετο οὐδὲ ἕν·
ὃ γέγονεν + Ἐν αὐτῷ ζωὴ ἦν· καὶ ἡ ζωὴ ἦν τὸ φῶς τῶν ἀνων + καὶ τὸ φῶς
ἐν τῇ σκοτίᾳ φαίνει· καὶ ἡ σκοτία αὐτὸ οὐ κατέλαβεν + Ἐγένετο ἄν ος
ἀπεσταλμένος παρὰ Θῦ· ὄνομα αὐτῷ Ἰωάννης + οὗτος ἦλθε εἰς μαρτυρίαν

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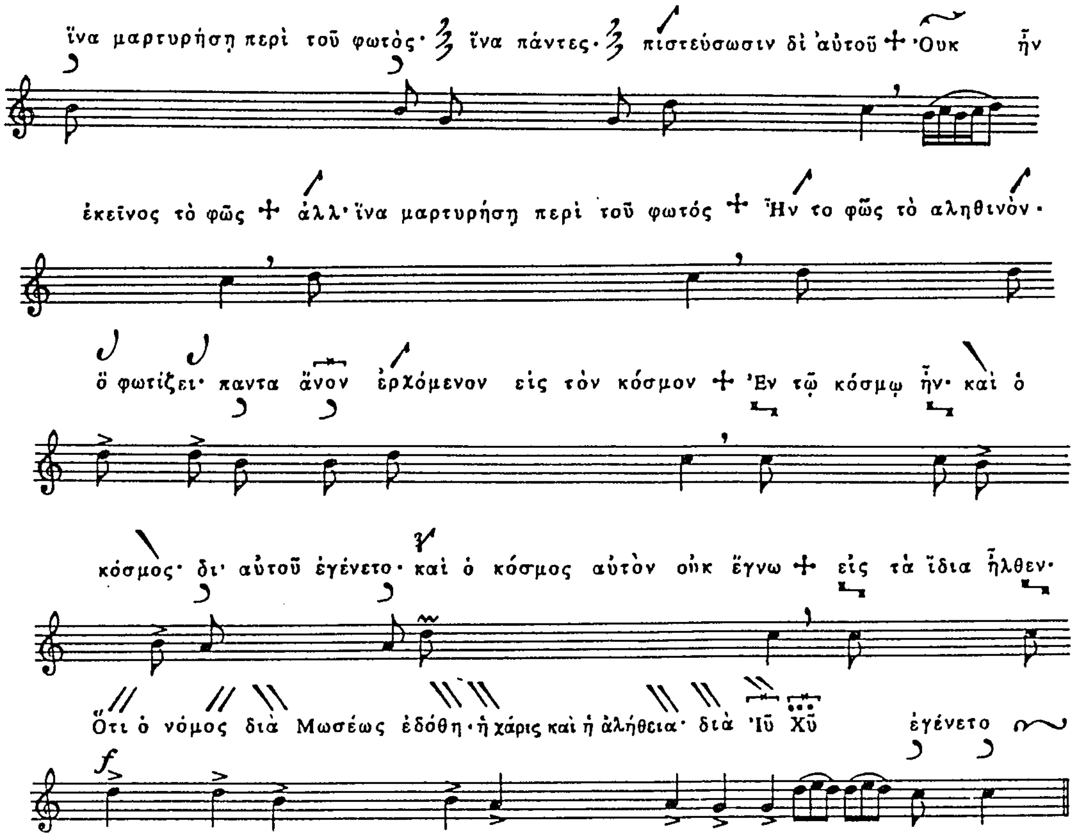
[97] Manuscript No. 160 in the Central Library of the University of Iasi, Iasi, Romania.


ἵνα μαρτυρήσῃ περὶ τοῦ φωτός· ἵνα πάντες· πιστεύσωσιν δι' αὐτοῦ + Οὐκ ἦν
ἐκεῖνος τὸ φῶς + ἀλλ' ἵνα μαρτυρήσῃ περὶ τοῦ φωτός + Ἦν το φῶς τὸ ἀληθινόν·
ὃ φωτίζει· παντα ἄνον ἐρχόμενον εἰς τὸν κόσμον + Ἐν τῷ κόσμῳ ἦν· καὶ ὁ
κόσμος· δι' αὐτοῦ ἐγένετο· καὶ ὁ κόσμος αὐτὸν οὐκ ἔγνω + εἰς τὰ ἴδια ἦλθεν·
Ὅτι ὁ νόμος διὰ Μωσέως ἐδόθη· ἡ χάρις καὶ ἡ ἀλήθεια· διὰ Ἰῦ Χῦ ἐγένετο
f

2. A system of neumes, governing the flow and execution of the melody, was introduced in the tenth century. This system of signs consisted of linear strokes and dots. Developing slowly, this system did not reached a definite form until the twelfth century.

In manuscripts of the Medio-Byzantine Period, two musical notation systems were used. Both systems were based on neumes and they follow each other chronologically.

1. Hagipolite notation was used from the twelfth to the fourteenth century. The signs of the Paleo-Byzantine Period, which were mostly linear, were converted by the twelfth century into more curved signs.

2. One of the characteristics of the Medio-Byzantine Period is the hyperornamentation of melodies. As a response to the need to notate the very florid chants, at the end of the fourteenth century all signs were revised and new signs were added. Among the added signs was a special category called *Great Hypostatses*. These signs, initially recorded on the manuscripts in red ink, indicated various degrees of agogic, rhythmic, and dynamic expression. The exactness in fixing intervals, as well as nuances of dynamics, rhythm, tempo, and expression had no parallel in Western Medieval or Renaissance music. The precision of the late Medio-Byzantine semiographic system is comparable, perhaps, only with that of music scores of twentieth-century European and American music which frequently also include words to explain the specific result that is desired.[98] This complicated semiographic system, known as the Koukouzelean Notation,

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[98] Egon Wellesz, *A History of Byzantine Music and Hymnography* (Oxford: Claredon Press, 1961) , 284.

survived the fall of Byzantine Empire in 1453, and remained in use until the beginning of the nineteenth century.

Examples of chants in Hagipolite notation as well as Koukouzelean notation with their transcription in western notation will be given in Chapter 4.

At the beginning of the nineteenth century a radical reform took place in Byzantine music. The purpose of this reform was to purge the Byzantine chant of foreign influences, to restore its authentic beauty, and to simplify the musical notation. Neo-Byzantine semiography, known as Chrysantean Notation[99], retained a small number of signs from Koukouzelean notation, and added some new ones.

This chapter will present only the Neo-Byzantine notation (Chrysantean musical semiography).

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[99] From Chrysantos de Madytos, the author of the semiographic reform. This reform was finished in 1821 when Madytos published his first treatise on Byzantine Music - *Theoriticon mega tis musickis.*

The Chrysantean Musical Semiography

The Chrysantean Notation uses five categories of neumes:

1. Diastematic Neumes, also called vocal or phonic neumes, indicate the intervals that make up the melody of the chant.

2. Temporal or Rhythmic Neumes regulate the duration of sounds.

3. Martyria[100] Neumes are compound signs with multiple functions. At the beginning of the chant they establish the mode, the melodic genera and the reference pitch (usually the modal fundamental) for the first Diastematic Neume. During the chant, the Martyria Neumes appear at cadence points reinforcing the syntactic division of musical phrases and serving as control elements during melodic intonation.

4. Modulation Neumes establish modal changes (modulation)[101] that may occur during the unfolding of the chant. In this category there are also

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[100] In Greek = witness

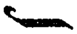
[101] The concept of modulation in Byzantine music is partially different that the concept of modulation in western music and it will be explain later in this chapter in connection with modulation neumes.

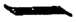
some special neumes that indicate the chromatic alteration of sound, corresponding to the sharp and flat in western music notation.

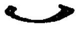
5. Ornamental Neumes represent ornamental notation. Similar to the ornamental signs of western music, these signs are not independent; they exist only in connection with Diastematic Neumes.

Diastematic Neumes

The basic principle in diastematic notation is that each neume (simple or compound) represents a melodic interval in relation to the preceding sound. The exact size of intervals are not represented by Diastematic Neumes but are related to the specific intervalic structure of modal scales. The Diastematic Neume that occur at the beginning of the chant relates directly to the modal fundamental established by a "key signature" neume (Martyria Neume). There are ten simple diastematic neumes:

1.  *Ison* - Perfect unison showing the repetition of the preceding sound,

2.  *Oligon* - raise the intonation by a second,

3.  *Petaste* - raise the intonation by a second (same intonational effect as the *Oligon*) but with a slight accent,

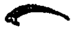
4. *Kentema* - this neume is used only in combination with other neumes (compound neumes) and indicates various ascending intervals,

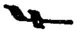
5. Two *Kentemas* - has the same effect as the *Oligon* indicating also a legato and the second attack unaccented,

6. *Hypsele* - this neume is used only as part of a compound neume. In combination with *Oligon* or *Petaste* it indicates to raise the intonation with a interval of the fifth (*Oligon*) or the sixth (*Petaste*),

7. *Epistroph* - lowers the intonation by a second,

8. *Hyporoy* - lowers the intonation with two consecutive seconds,

9.  *Elaphron* - lowers the intonation by a third,

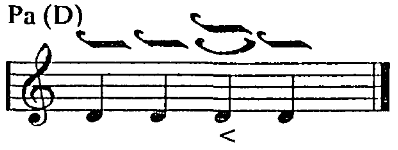
10.  *Chamile* - lowers the intonation by a fifth.

Compound neumes are simply combinations of the above simple neumes. They are used for the notation of intervals not represented by simple neumes, and to create accented forms of the intervals. The neumes in the Diastematic category are not limited solely to their intervalic representation; some indicate various types of note expression. For instance, *Two Kentemas* indicate the rise of intonation by a second and also with a legato attack, and *Petaste* placed below a simple or compound neume indicates a slight accent. Diastematic neumes, simple and compound, function also as rhythmic neumes indicating a durational value of one beat (Standard Durational Unit).

ASCENDING INTERVALS

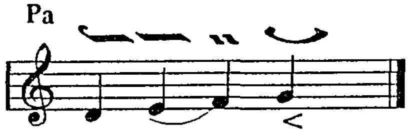
The Unison

The unison is represented by *Ison*. A slight accent is indicated when *Ison* is placed over *Petaste.*

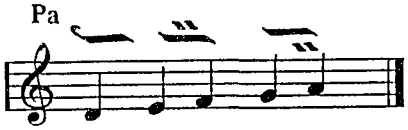


The Second

The second is represented by *Oligon*. The interval of the second combined with legato is represented by *Two Kentemas*. The second with an accent is represented by *Petaste*.

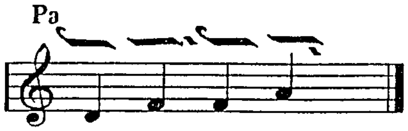


Two *Kentemas* placed above or below *Oligon* raise the intonation with two consecutive seconds, each one having a duration of a beat.

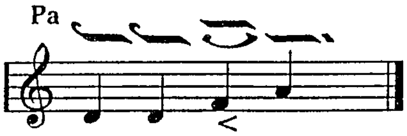


The Third

The third is represented by *Kentema* which is placed on the right or below *Oligon*.

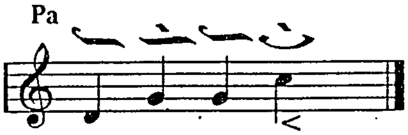


For an interval of the third and a slight accent, *Oligon* is placed above *Petaste.*



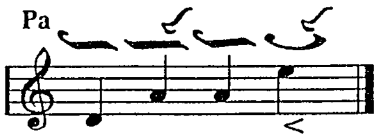
The Fourth

The fourth is represented by *Kentema* which is placed centrally above *Oligon*. When *Kentema* is placed centrally above *Petaste* it indicates a slight accent.



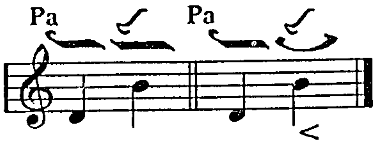
The Fifth

The fifth is represented by *Hypsele* which is placed above the right side of *Oligon*. When *Hypsele* is placed above the right side of *Petaste* it indicates a fifth with a slight accent.



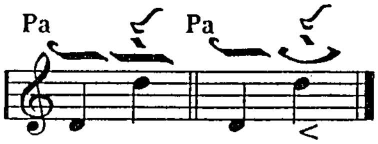
The Sixth

The sixth is indicated by *Hypsele* placed above the left side of *Oligon*, or above *Petaste* for the accented sixth.



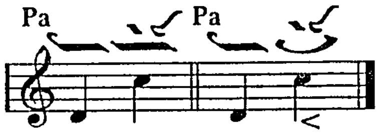
The Seventh

The compound neume showing the seventh is made out of *Oligon* combined with two other neumes: *Hypsele* placed above and to the right of *Oligon* and *Kentema* placed above and to the left. For the addition of a slight accent, *Hypsele* and *Kentema* are placed in the same position over *Petaste*.



The Octave

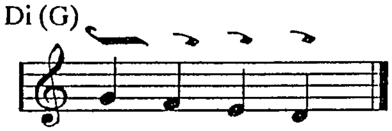
The octave is represented by *Kentema* placed above *Oligon* and *Hypsele* placed above *Kentema*. For the addition of a slight accent the *Oligon* is replaced by *Petaste*.



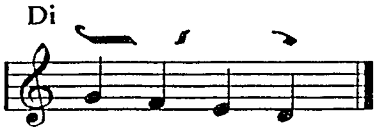
DESCENDING INTERVALS

The Second

The second is represented by *Epistroph*.

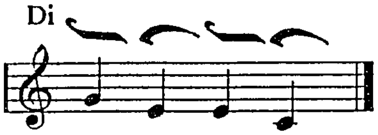


The simple neume *Hyporoy* represents two consecutive descending seconds, each one with a duration of a beat.



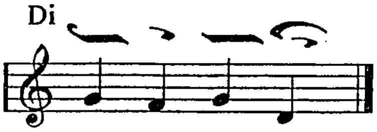
The Third

The third is represented by *Elaphron*.



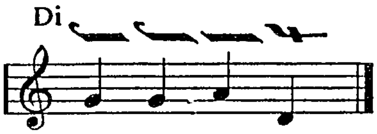
The Fourth

The fourth is represented by *Elaphron* placed above *Epistroph*.



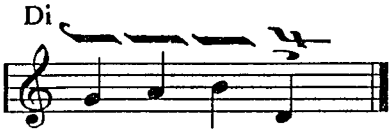
The Fifth

The fifth is represented by *Chamile*, a simple neume.



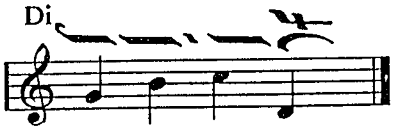
The Sixth

The sixth is represented by *Chamile* placed above *Epistroph*.



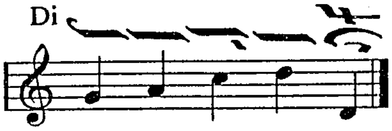
The Seventh

The seventh is represented by *Chamile* placed above *Elaphron*.



The Diapason (Octave)

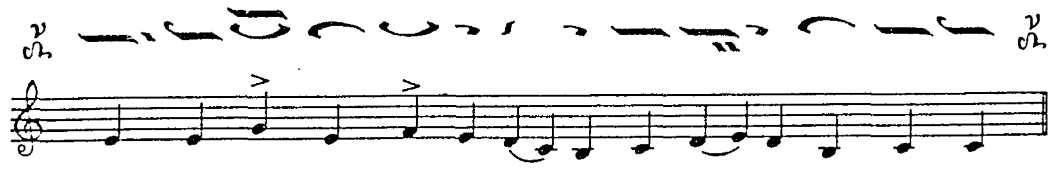
The descending octave is represented by a compound neume formed by three simple ones. *Chamile* is placed over *Elaphron* and both above *Epistroph*.



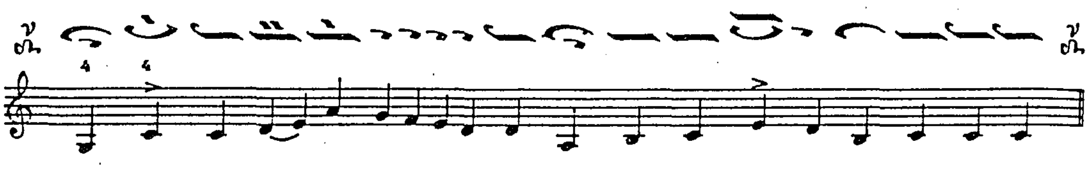
To add a slight accent, simple or compound neumes indicating ascending or descending intervals are placed over *Petaste.*

Examples 3-2, 3-3, 3-4, 3-5 and 3-6[102] are exercises in Byzantine solfege with their transcription given in western notation. They all are in Mode 8 with the fundamental on Ni (C). The sign at the beginning of each exercise is a Martyria Neume indicating Ni (C) of a diatonic mode as reference pitch. A detailed description of the Martyria Neumes and their function in Byzantine Semiography will be presented later in this chapter.

Example 3-2



Example 3-3



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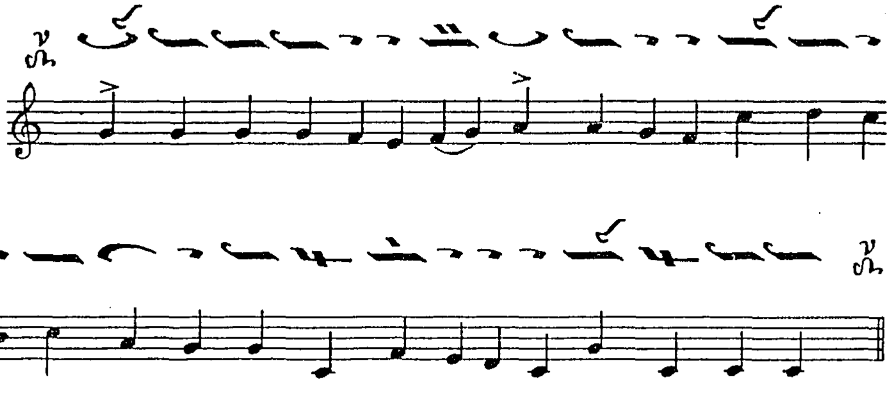
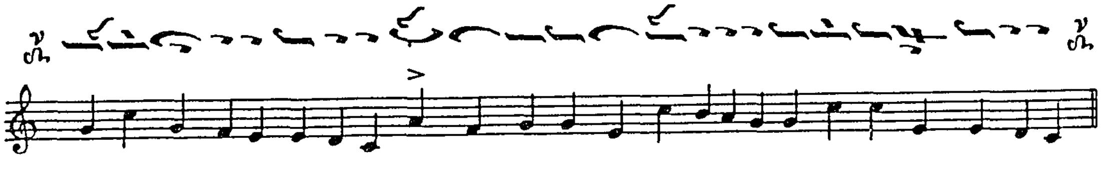
[102] Grigore Panţiru, *Notaţia şi ehurile muzicii Bizantine* (Bucharest: Editura muzicală a uniunii compozitorilor, 1971), 182.

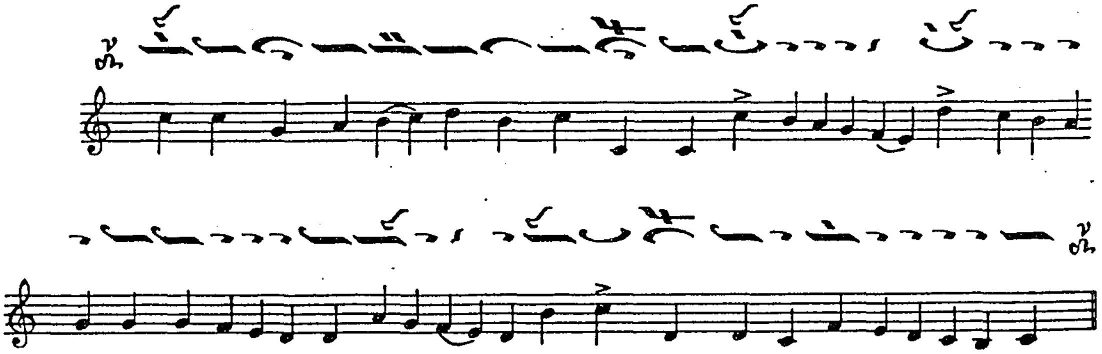
Example 3-4



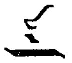
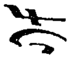
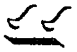
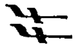
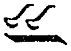
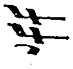
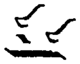
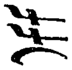
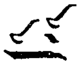
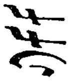
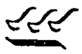
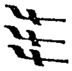
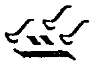
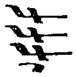
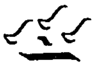
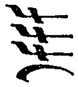
Example 3-5



Example 3-6



Although intervals larger than the octave are rarely used in Byzantine chants, theoretically, intervals of any size can be notated. Below is the representation of intervals larger than the octave up to a double octave.

INTERVAL	**ASCENDING**	**DESCENDING**
Diapason		
Ninth		
Tenth		
Eleventh		
Twelfth		
Thirteenth		
Fourteenth		
Disdiapason		

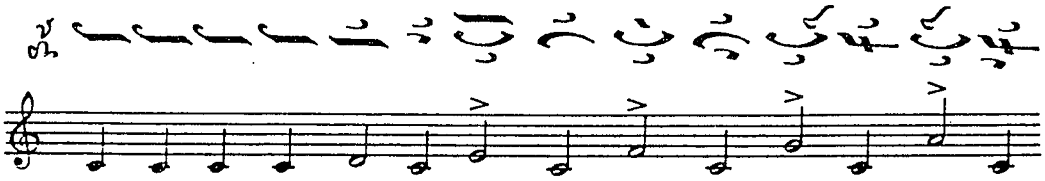
Temporal Neumes

Each Diastematic Neume carries a duration of one beat (Standard Durational Unit). This basic rhythmic unit can be proportionally augmented or diminished by the effect of the Temporal Neumes placed above or below the Diastematic Neumes. There are four categories of Temporal Neumes: 1) Temporal Neumes of proportional augmentation, 2) Temporal Neumes of proportional diminution, 3) Temporal Neumes with mixed effect, and 4) Compound Temporal Neumes.

Temporal Neumes of Proportional Augmentation

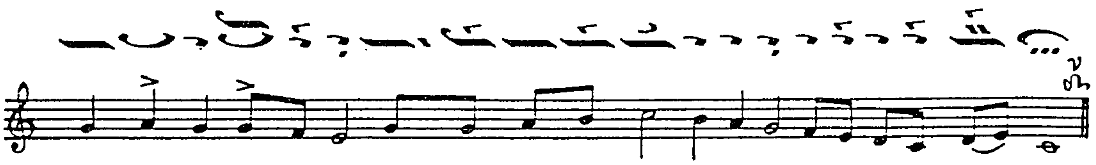
⤻ *Klasma* placed above or below a Diastematic Neume, adds one beat to the Standard Durational Unit represented by the Diastematic Neume.

Example 3-7



• *Aple* placed below a Diastematic Neume adds one beat. *Aple* appears on Byzantine manuscripts simply as a dot or as a short stroke, slightly oblique from right to left. *Aple* has the same effect as *Klasma* but is different because it can be used in its multiplicative forms. Two *Aple* are called *Diple* - •• and placed below a Diastematic Neume increase the duration with two beats; three *Aple* are called *Triple*- ••• and increase the duration with three beats. Any number of *Aple* can be added and will indicate the increase of duration with that number of beats. Because the Byzantine chants do not use note durations larger than the whole note (or four Standard Durational Units), only *Aple, Diple, and Triple* are found in Byzantine manuscripts.

Example 3-8

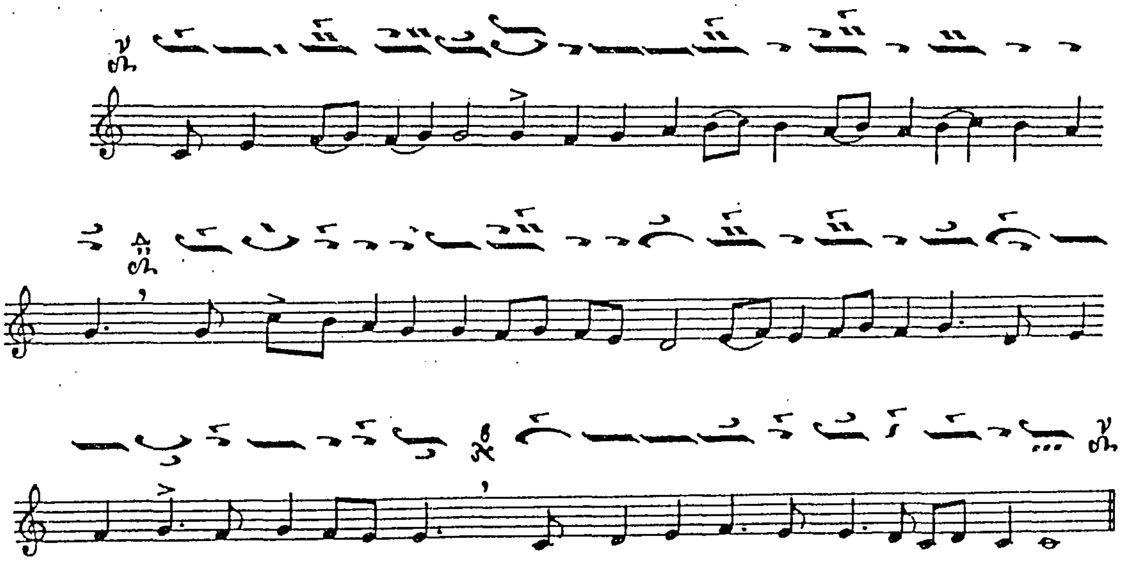


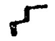
Temporal Neumes of Proportional Diminution

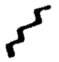
Gorgon placed above a Diastematic Neume indicates that the duration of the note above which it is placed and also the preceding note are

to equally divide the beat unit. When the *Gorgon* is placed above the first neume of the chant it indicates the execution of that note as an anacrusis (pickup note). If a note with *Gorgon* follows a note with *Klasma*, the first note receives the duration of a beat an a half and the second note (the one with *Gorgon*) receives a duration of a half beat.

Example 3-9

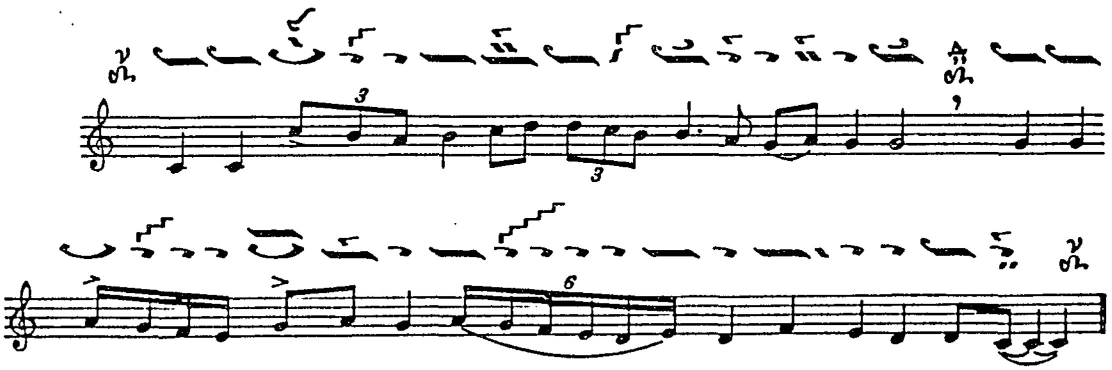


 *Digorgon* indicates that the note above which it was placed, the preceding note and also the following one are to equally divided the beat unit. This rhythmic formula is equivalent to the triplet.

 *Trigorgon* indicates that the note above which it is placed, the preceding note and also the two following ones are to equally divide the beat

into four units. Byzantine chant does not use durations smaller than the four part division of the beat (that is the sixteenth note in transcriptions using the quarter note as equal to the Byzantine Standard Durational Unit)[103], but Byzantine semiography is capable of representing divisions of the beat in any number of equal units. This is possible through the addition of "n" numbers of *Gorgons*. The number of equal units dividing the beat is the number of *Gorgons* +1. The notes participating in the division of the beat will always be the note above which the *Gorgons* are placed, the preceding one and n-1 following notes, where "n" is the number of stacked *Gorgons*.

Example 3-10



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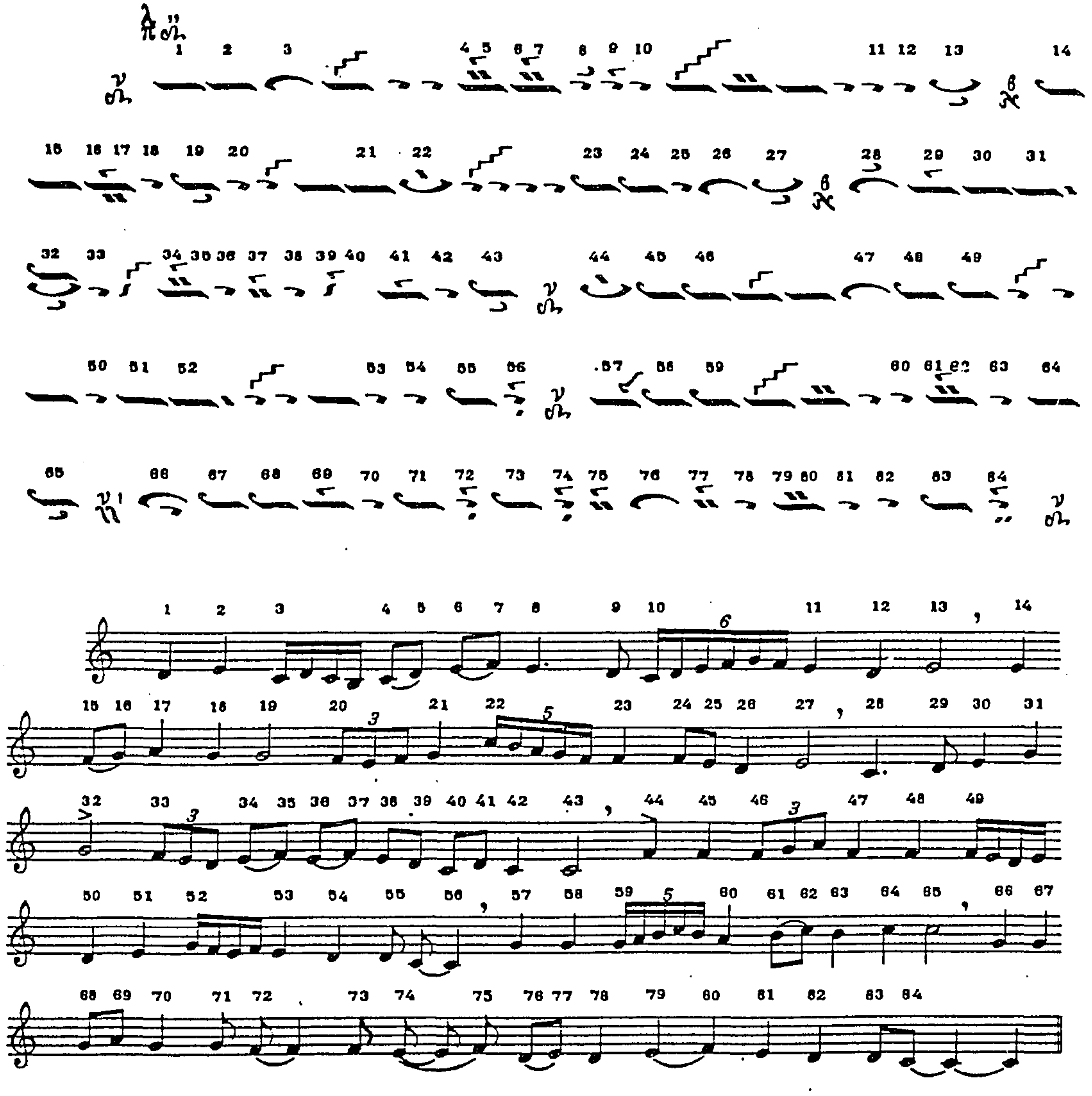
[103] In Chapter 2, I mentioned that in transcriptions of Paleo-Byzantine chant and Medio-Byzantine chant into Western notation, the Standard Durational Unit was represented by the eight note - SDU = ♪. In transcriptions of Neo-Byzantine chant in Western notation the quarter note was consistently used to represent the Standard Durational Unit - SDU = ♩. Since in this work the Neo-Byzantine chant is the main scope of investigation, throughout this study, the SDU will be equivalent with a quarter note.

Example 3-11[104] is an exercise of Byzantine solfege using various rhythmic formulae obtained through the use of multiple *Gorgons.*

Example 3-11



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[104] Grigore Panţiru, *Notatia şi ehurile muzicii Bizantine* (Bucharest: Editura muzicală a uniunii compozitorilor, 1971), 190.

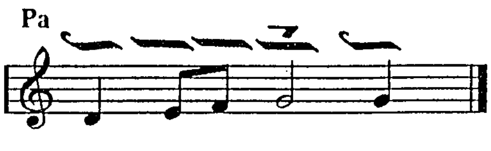
In example 3-11, for an easy reference between the Byzantine score and its transcription, I have numbered each neume except for the group dividing the beat in more than 2 units. Those groups receive a single number placed above the note that begins the group. The Martyria at the beginning of the exercise indicate Ni (C) as the fundamental of a diatonic mode 8, and as a reference pitch for the first Diastematic Neume. A detailed explanation of the meaning and function of the Martyria Neumes which are placed at the beginning of the exercise between the musical phrases, and at the end of the exercise, will be given later in this chapter. The first Diastematic Neume, neume 1, is an *Oligon* indicating the rise of intonation with an interval of a second from the reference pitch Ni (C). Therefore the first note of the exercise is Pa (D). Neume 2 raises the intonation again with a second. Neume 3, an *Elaphron*, lowers the intonation with a third, the *Oligon* raises it with a second and the next two *Epistrophs* lowers it with two consecutive seconds. Above the *Oligon* a *Trigorgon* is placed meaning that the note represented by *Oligon*, the preceding one represented by *Elaphron* and the two following notes, each represented by an *Epistroph*, are equally dividing one beat in four sixteenths. Neume 4, 5 (same as 6, 7) is represented by

Oligon with two *Kentemas* placed above, indicating the rise of intonation with two consecutive seconds connected with a slight legato. Above the two *Kentemas* a *Gorgon* is placed indicating that the two consecutive seconds are executed in one beat. Although apparently similar, the compound neume 16, 17 requires a different interpretation and transcription. Here the *Oligon* has the two *Kentemas* places below. Similar to the neume 4, 5, it indicates the rise of intonation with two consecutive seconds connected through a slight legato. The difference is in the interpretation of rhythm indicated by the *Gorgon* which is placed this time over the *Oligon*. The two notes to be performed in one beat are the first of the two consecutive seconds indicated by *Oligon* with two *Kentemas* and the preceding note represented by neume 15. Neume 8 is an *Epistroph* with a *Klasma* placed above. *Epistroph* lowers the intonation with a second and *Klasma* increases the duration with one beat. So far the note at 8 would have been an E half note. However, neume 9 has a *Gorgon* placed above, which indicates that this note and the preceding one are to equally divide one beat. The preceding note was a half note, therefore the *Gorgon* above neume 9 will decrease the value of neume 8 with a half beat, the resulting rhythmic formula being neume 8--dotted quarter note, and neume 9--eighth note. Neume 10 and the following four neumes (the second one--an *Oligon* with two *Kentemas*, is accounting for two notes) participate in a group of six notes which are equally dividing one beat, as indicated by the *Pentagorgon* above the *Oligon* immediately following neume 10. Neume 11 and 12 are two *Epistrophs*, each one lowering the intonation with a second and each representing a quarter note duration. Neume 13, a *Petaste* with *Klasma* placed below, indicates the rise of intonation with a second with a slight accented attack, and the increase of the duration with one beat. The resulting note at 13 is an E, half note. The following sign is a Martyria Neume indicating the sound Vu (E) within a diatonic mode. This sign in this particular place has three functions: 1) establishes the end of the first melodic phrase, 2) reassures us that if we ended the first phrase with E we have correctly followed the intonational indication of Diastematic Neumes, and 3) reestablishes the diatonic mode and a new reference pitch for the next Diastematic Neume.

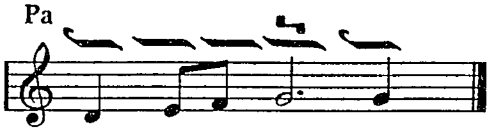
Neumes with Mixed Effect

There are two Temporal Neumes with mixed effect. I found that they are very rarely used in Byzantine manuscripts for the notation of rhythmic formulas, but they are essential for the notation of tempo and melodic idiom.

Argon adds one beat to the note above which is placed, and diminishes in half the duration of the two preceding notes.

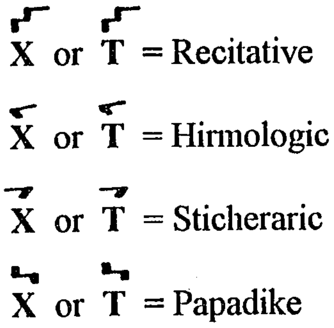


Diargon adds two beats to the note above which it is placed and diminishes to half the duration of the two preceding notes.



Argon and *Diargon* along with *Gorgon* and *Digorgon* participate in the formation of graphic signs establishing the tempo and in the same time the idiom of Byzantine chant. In the manuscripts of Paleo-Byzantine and Medio-Byzantine Periods, these graphic signs consisted of the letter **X** (corresponding in Greek to H, from *Hronos*) with one of the four mentioned Temporal Neumes placed above the letter. In some manuscripts of Neo-Byzantine Period, the letter **X** was replaced by **T** from *tactus*.

For the notation of Recitative chant and Presto tempo, the Temporal Neume is the *Digorgon*. For the notation of Hirmologic chant and Allegretto tempo, the Temporal Neume is *Gorgon*. For the notation of Sticheraric chant and Andante tempo, the Temporal Neume is *Argon*. For the notation of Papadike chant and Largo tempo, the Temporal Neume is *Diargon*.

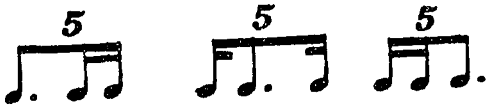


Compound Temporal Neumes

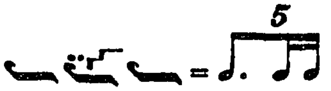
Combinations of *Aple*, *Gorgon*, and their multiplicative forms are used for the notation of rhythmic formulae consisting of unequal divisions of the beat, for instance the dotted eighth followed by sixteenth. The following principles apply to the notation of all unequal divisions of the beat:

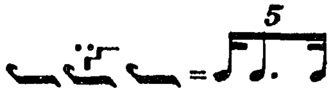
1. The number of *Gorgons* + 1 indicates the number of notes (whether they are of equal or unequal values) performed in one beat. The Diastematic Neumes participating are the one preceding the *Gorgons* and the n following ones, where n is the number of *Gorgon*.

2. The number of *Gorgons* + the number of *Aple* + 1, indicates the number of equal units dividing the beat. For instance, a *Digorgon* with *Diple* indicates that the beat divides in five equal units, but the number of notes performed are only three. This implies that three units are united in one single note. There are three possible rhythmic variants.

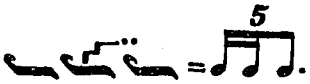


The position of the *Diple* determines which note has the longer duration.

3. The note with longer duration corresponds with the numeric order of the *Gorgon* in front of which the *Aple* is placed. If the last note is longer the *Aple* is place after the last *Gorgon*. For instance, if the *Diple* is placed before the first *Gorgon* belonging to a *Digorgon*, then the first note is longer. 

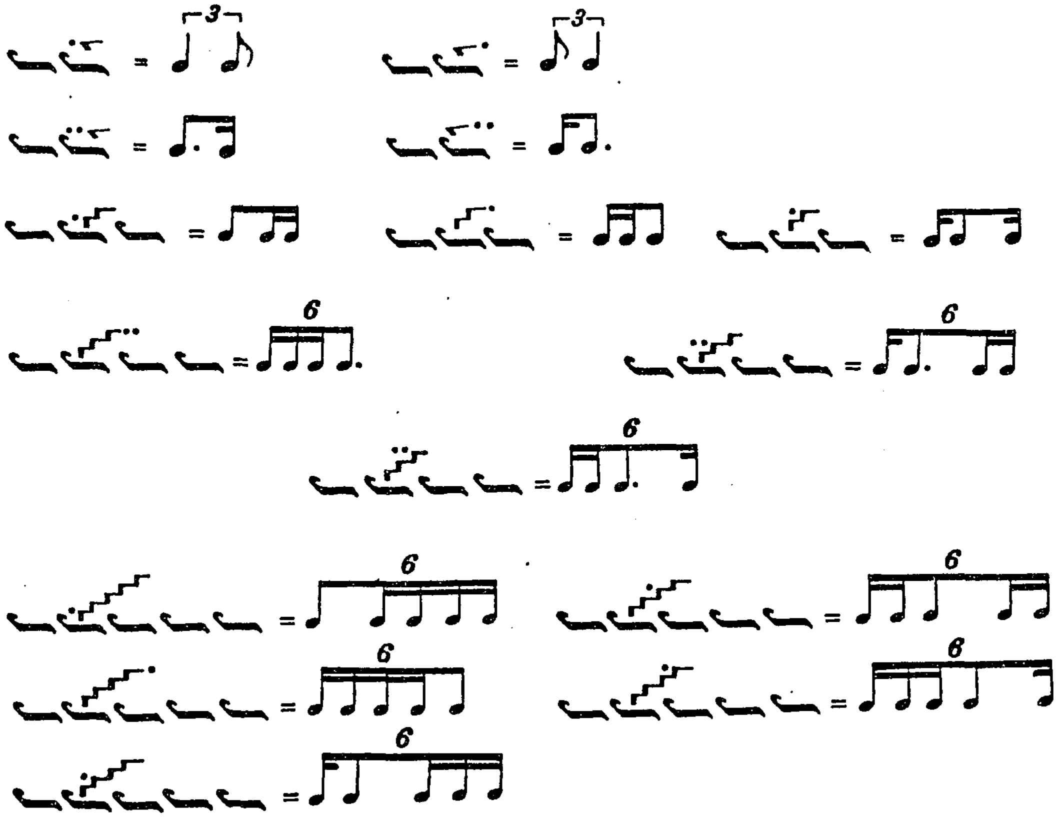
If the *Diple* is placed in front of the second *Gorgon*, the second note is longer. 

If the *Diple* is placed after the second *Gorgon*, the last note is the longest.

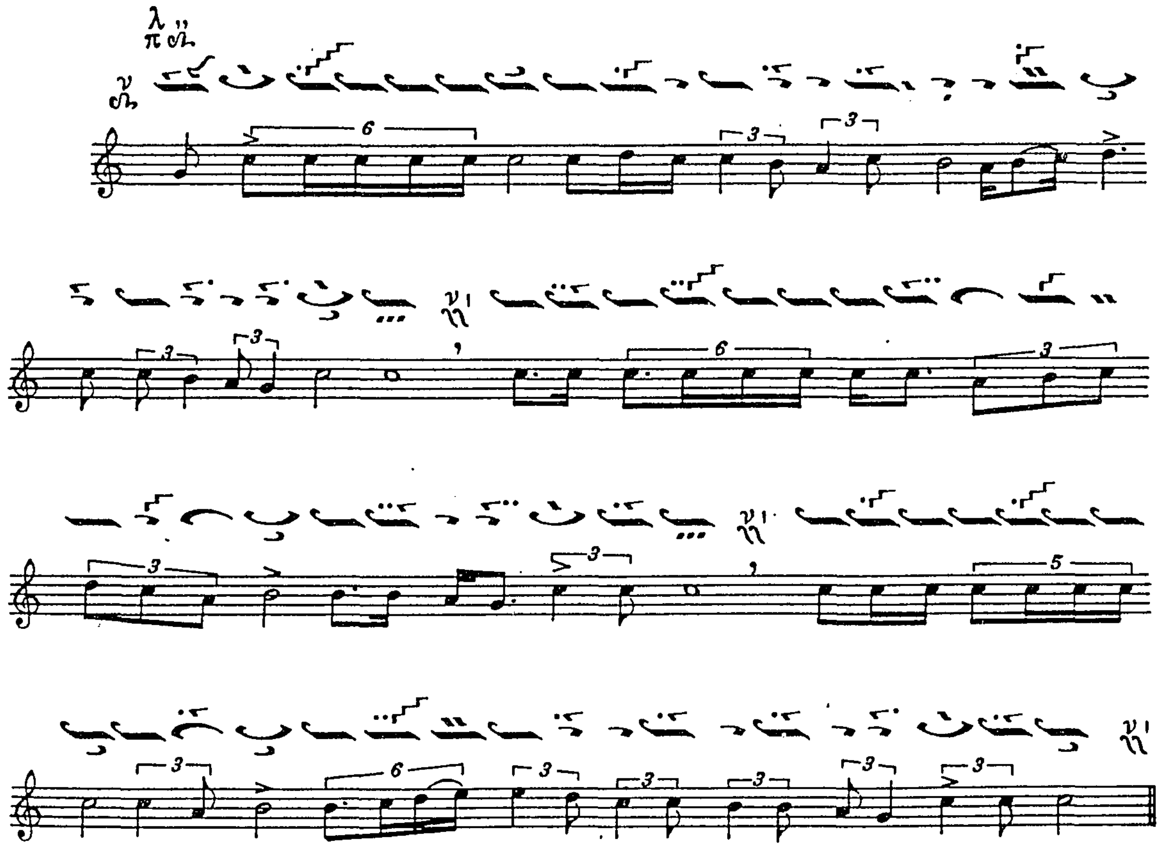


4. The number of units, equally dividing the beat, that unites to form the longer note is the number of *Aple* + 1.

Below are a few possible rhythmic formulae obtained by different combinations of *Aple* and *Gorgons*.



Example 3-12[105]



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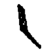
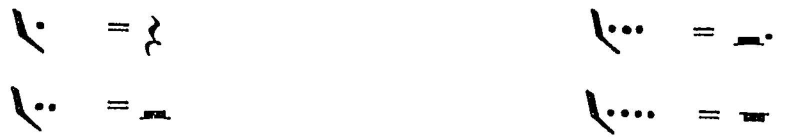
[105] Grigore Pantiru, *Notatia si ehurile muzicii bizantine* (Bucharest: Editura musicala a uniunii compozitorilor, 1971), 193.

The Notation of Rests

Byzantine music does not use rests as part of the notational schema. Pauses result from syntactic phenomena such as caesura and the required breathing pauses at the end of text verses and melodic phrases. Still, Byzantine musical semiography does have signs representing rests. Although these signs are not used in chants, they are described by some Byzantine theorists in pedagogically oriented works.[106] All of the rests described in these works are not used in the interior of melodic phrases, but only at the end, where they coincide with breathing rests. They prolong or provide a more precise duration for the breathing rest. The signs representing rests are obtained through various combinations of *Varia,* (an ornamental neume)  *Aple* and *Gorgon*. *Varia* followed by *Aple* is used for the representation of rests equal with the Standard Durational Unit (one beat) and larger. The duration of the rest in SDUs is equal with the number of *Aple* following *Varia*.



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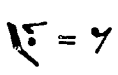
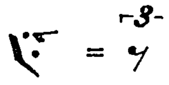
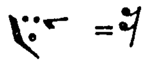
[106] Bourgault-Ducoudray, *Etude sur la musique ecclésiastique grecque* (Paris: Librairie Hachette & Cie, 1877); Grigore Pantiru, *Notatia si ehurile muzicii bizantine* (Bucharest: Editura muzicala a uniunii compozitorilor, 1971).

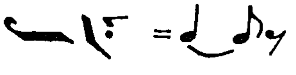
For the representation of rests with durations smaller than one beat, *Varia* is followed by various combinations of *Aple* and *Gorgon.*

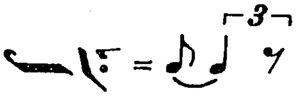


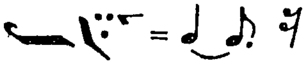




Actually, these rests add a full beat because their graphical signs indicate also that the duration complementary to the rest is added to the preceding note.







In manuscripts of Byzantine chant the usual signs indicating the breathing rests are the Martyria Neumes. They are placed at the beginning of the chant indicating the mode and the reference pitch, and at the end of each melodic phrase as control elements for intonation and to reestablish or change the mode and the reference pitch. The Martyria Neumes will be described in detail later in this chapter. A

Another sign that functions as a caesura and breathing rest in places other than the end of the phrase is *Stavros*[107]-- ✠

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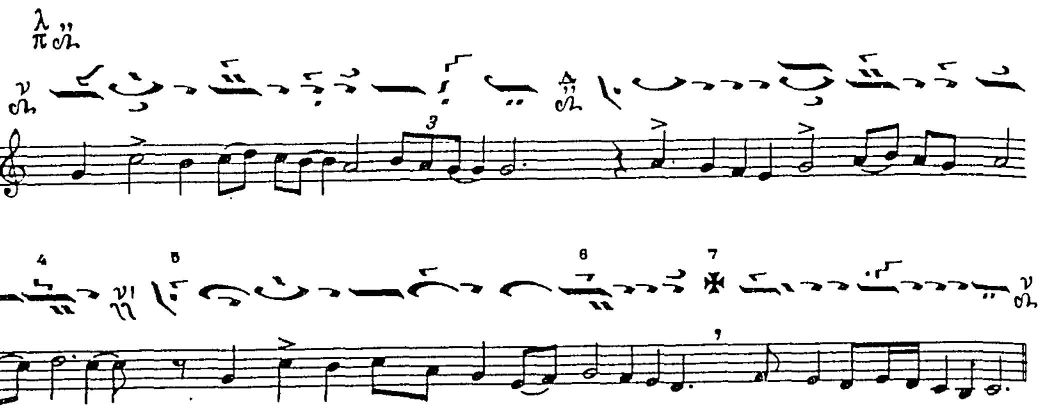
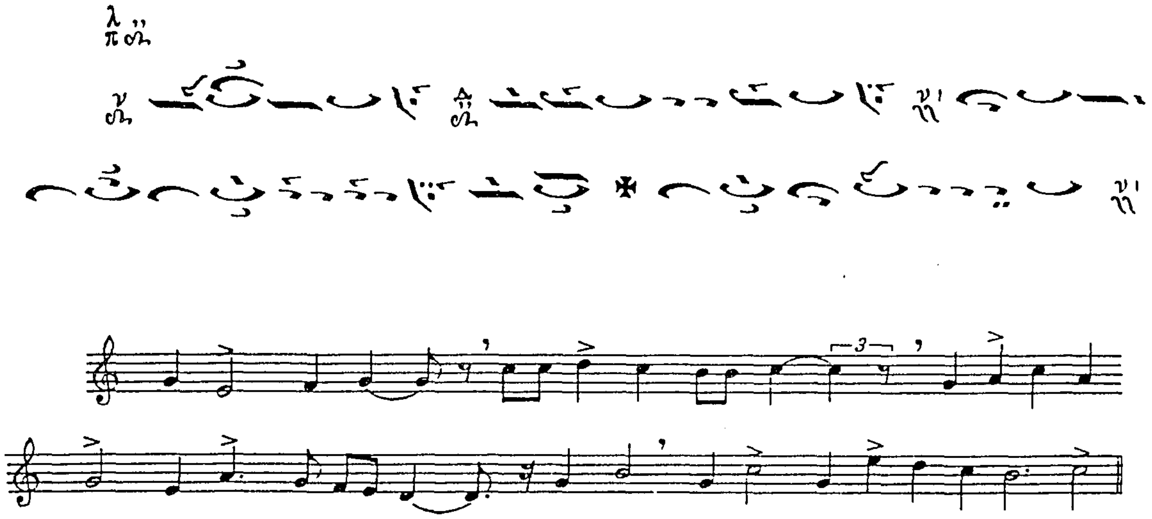
[107] In Greek = Cross

Example 3-13[108]



Example 3-14[109]



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[108] Grigore Pantiru, *Notatia si ehurile muzicii bizantine* (Bucharest: Editura muzicala a uniunii compozitorilor, 1971), 196.
[109] Nifon Ploesteanu, *Carte de musica bisericeasca* (Bucharest: Tipografia cartilor bisericesti, 1902), 43.

Martyria Neumes

There are two different but related groups of Martyria Neumes: Martyria Neumes with individual forms for each pitch, and the eight Great Martyria Neumes, each of which represents one of the eight modes.

Martyria Neumes

Martyria Neumes are compound signs functioning as reference pitches, elements of control for intonation, and syntactic divisors of phrases. They are placed at the beginning of chants and at the end of each melodic phrase. These signs have been retained from the Koukouzelean notation of the Medio-Byzantine period and are minimally modified. A Martyria is made out of two signs which are superimposed one over the other. The superior sign is one of the Greek letters indicating the name of a note according to the Byzantine solmization.

z	ν	π	δ	γ	Δ	κ	z’	ν’	π’
Zo	Ni	Pa	Vu	Ga	Di	Ke	Zo’	Ni’	Pa’
B	C	D	E	F	G	A	B’	C’	D’

For notes above A, the Greek letters receive a prime sign ('). For notes below B, the letters move to an inferior position. The function of these letters is to establish the reference pitch for the first Diastematic Neume of the chant. For instance, if the sign is π Pa (D) and the first Diastematic Neume is *Epistroph*, which lowers the intonation by a second, then the starting note is Ni (C). As simple as it looks now, the meaning of these letters was a mystery for musicologists like Gaisser, Thibaut and Riemann, who tried in vain to solve the problem of these Greek letters. We own the solution to Tillyard, a Greek scholar, who found out, by trial and error, the meaning of these letters.[110]

The other signs, placed (within the central octave, between B and A) below the letters, appear to be purely conventional signs. I found no particular name given to these signs. Tillyard was not successful in fully discovering the meaning and function of these signs. He stated only that these signs have to do with the indication of modes. Tillyard was right, but he, and in fact all other Byzantine musicologists and theorists, found no systematic interpretation of these signs--what they really mean and how they indicate the mode. In the following pages I present the results of my study with regard to the meaning and function of these signs.

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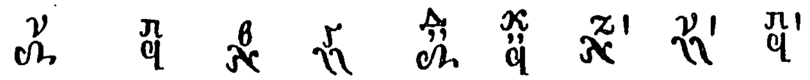
[110] Egon Wellesz, *A History of Byzantine Music and Hymnography* (Oxford: Clarendon Press, 1961), 18, 301.

The graphic shape of these signs derived from letters of the Greek alphabet which have been modified. They are different (with some exceptions) for each of the three genera of Byzantine chant: Diatonic, Chromatic, and Enharmonic.

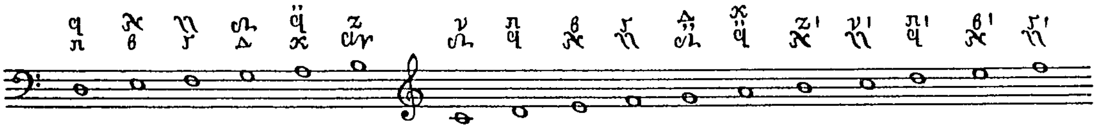
Below are the Martyria Neumes for diatonic genera:



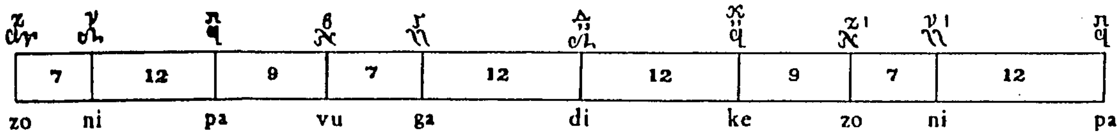
Ni	Pa	Vu	Ga	Di	Ke	Zo	Ni’	Pa’
C	D	E	F	G	A	B	C’	D’

The modes using these Martyria Neumes are Mode 1, 4, 5, 8 and Mode *Varis*, a diatonic variant of Mode 7.

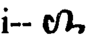
As mentioned above, the letters (signs in superior position) receive a prime sign (’) above A, and the two signs making up the Martyria Neume change positions for notes below B.



A first observation is that the inferior signs are the same for Vu and Zo, Ga and Ni', and very similar (two strokes are added above the sign) for Ni and Di, and for Pa and Ke. In Chapter 2, I mentioned that the diatonic scale is made out of large tones called *Mizon*, small tones called *Elasson* and smallest tones call *Elahistos*. In the division of the octave into 68 degrees, made by Madytos, the large tone has 12 degrees, the small tone has 9 degrees and the smallest tone has 7 degrees.

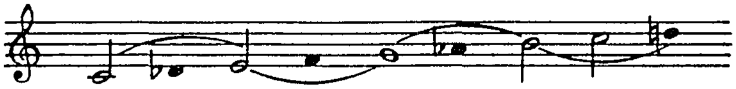


The analysis of the intervals (in Madytos degrees) preceding and following the notes, reveals that most of the notes that are preceded and followed by the same intervals have the same inferior Martyria sign. Therefore the inferior Martyria signs indicate the correct intonation of the intervals surrounding the notes.

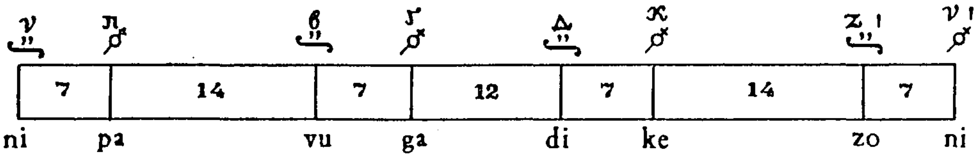
A second observation is that even if Pa and Ke have the same surrounding intervals, their inferior Martyria signs are slightly different--that is the sign for Ke has two apostrophes added above. Notes Ni and Di are not surrounded by the same intervals and yet still have the same inferior Martyria with the addition of the two apostrophes above Di. The similarity of the Martyria signs is related to the special relationship of the modes represented by these pitches. Pa and Ke are the modal fundamentals of Mode 1 and 5. Although the principle of intervalic surrounding requires the same inferior Martyria sign, they need to be different because they represent two different modes. They also need to be similar because Mode 1 and 5 are in authentic--plagal relationship. Di and Ni are the fundamentals of Mode 4 and 8. Even the principle of intervalic surrounding requires different inferior Martyria signs (Di is preceded and followed by 12 degrees while Ni is preceded by 7 degrees and followed by 12), the relationship authentic--plagal requires similar inferior Martyria signs. The inferior Martyria sign for Di--  , which is the fundamental of Mode 4, derived from Δ--the fourth letter of the Greek alphabet. Ga and Ni' do not have a similar relationship, therefore the principle of surrounding intervals requires that they have the same inferior Martyria Neume, since they both are preceded and followed by the same intervals.

A third observation is that Zo has a unique inferior Martyria sign, although it is surrounded by the same intervals as Ni' and Ga. A unique sign is required because Zo is the modal fundamental of a diatonic variant of Mode 7. This mode, named *Varia*,[111] is an independent mode in no relation with enharmonic mode Authentic 3, with fundamental on Ga.

The inferior Martyria signs in chromatic and enharmonic genera follow the rule of intervalic patterns generated by the special construction of the modal scale. The scale of Chromatic Mode 2 is formed from the Diphonic system. The Diphonic system is based on the succession of two unequal interval units, in which the position of the smallest tone is consistently first, and the size of the larger unit alternates between major and minor thirds.



Therefore, to reinforce the Diphonic relationship, in chromatic modes there are only two alternating inferior Martyria signs.



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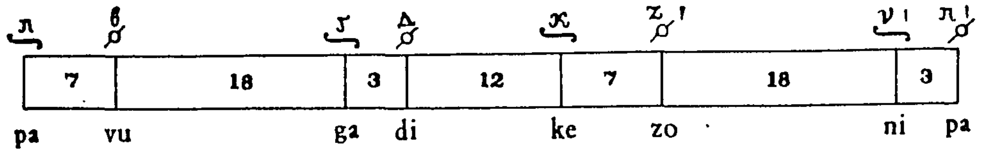
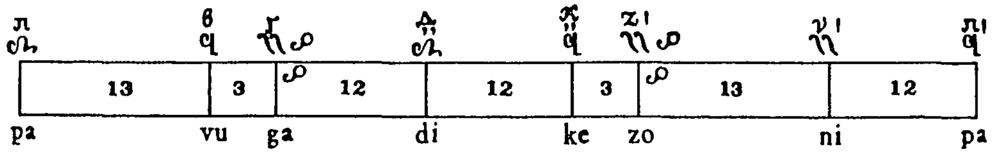
[111] In Greek = grave, low pitched

In chromatic Mode 6, the two signs are similar (without the two strokes and without the cross), starting this time on Pa.

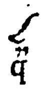


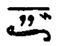
The inferior Martyria signs for enharmonic modes are similar to the signs for diatonic modes because the enharmonic modes are modified diatonic modes. To clarify where the modifications take place a special neume from the modulation category, called *Agem*, is placed on Ga (F) and Zo (B). The effect of this neume can be different depending of the function of the note above which it is placed. If *Agem* is placed above a note with a primary function (see Chapter 2 for Functions of Scale Degrees) it indicates that the note below is to be raised to an interval of three Madytos degrees. If *Agem* is placed above a secondary function note, it indicates that this note is to be lowered to an interval of three Madytos degrees in relation to the note below.



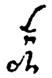
The Great Martyria Neumes

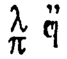
The Great Martyria Neumes are individual signs representing each of the eight modes. They symbolize the modal scale, its functional relationships, and the *Ethos* specific to each of the eight modes. Graphically, they are based on the inferior Martyria Neume signs representing the modal fundamental note to which some graphic additions were made. The Great Martyria Neumes are placed at the beginning of the chant above the Martyria Neume, and are followed most of the time by the Greek letter indicating the modal fundamental and also by the temporal neume which indicates the tempo and melodic idiom. In front the Great Martyria of the plagal modes, except Mode 7, the Greek letters π (P) and λ (L) are superimposed (P below and L above) as abbreviation for the Greek word plagal. Mode 7 does not receive this abbreviation because the most used form is the independent diatonic variant *Varia* with the fundamental on Zo, mode that is not in related with enharmonic Mode 3, but rather derived from Mode 1. Below are the eight Great Martyria Neumes representing the eight modes.

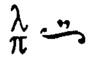
Mode 1 = 

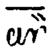
Mode 2 = 

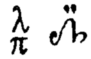
Mode 3 =

Mode 4 = 

Mode 5 = 

Mode 6 = 

Mode 7 = 

Mode 8 = 

Modulation Neume

In Byzantine music, the notion of modulation implies that the melody of the chant departs from the intervalic pattern and functional relationship of a given mode and follows ones which belong to another mode. In other words, modulation involves the transition from a mode with a specific scale organization and functionality to another mode with a different scale organization and functionality. For a better understanding of this concept I will compare Byzantine modulation with the modulation in Western tonal music. A change of tonal center from C major and A minor is called modulation. The scale of C major has, of course, a different intervalic organization than A minor. There are also some differences in the implied melodic directionality of some scale degrees, for instance the 3rd and 6th degree. Modulation is also the term used in Western tonal music for the change of tonal center from C major to G major. However, the scales of C major and G major have the same intervalic organization and their scale degrees have identical function. The only difference between C major and G major is that they are built on different tonal centers. In Byzantine music this transposition process is not called modulation. Because the lack of proper Byzantine terminology, I will simply label this process as transposition.

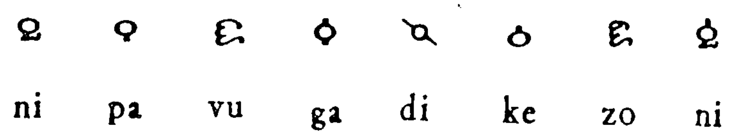
The modulation neumes are called Phthorai. Most of these signs were retained from the Koukouzelean Notation. Some Phthorai have been modified and some new added. In Koukouzelean notation the modulation signs were initially recorded in red ink, like the Great Hypostases. In Chrysantean notation (Neo-Byzantine notation) the Phthorai were recorded with black ink. In fact, the notation with red ink was completely eliminated in the Neo-Byzantine notation. There are two categories of Phthorai Neumes: Principal Phthorai and Secondary Phthorai.

Principal Phthorai are responsible for the modulation and transposition of a chant. Their function is similar to the change of Key Signature in Western music. The Secondary Phthorai are responsible for local alteration of pitches, similar to the sharp and flat signs in Western music.

Principal Phthorai

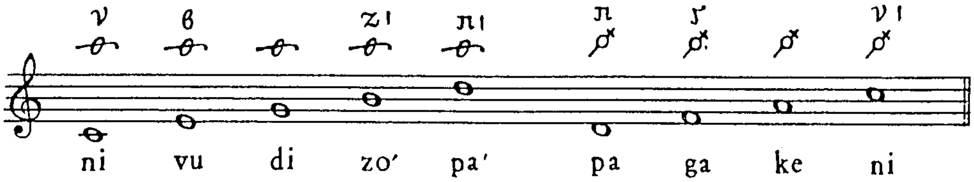
There are three categories of Principal Phthorai: 1. Diatonic, 2. Chromatic, and 3. Enharmonic.

1. There are eight diatonic Phthorai, one for each scale degree of the diatonic scale.

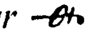


2. There are five chromatic Phthorai: two for Mode 2, two for Mode 6 and a special Phthora indicating the scale of chromatic Mode *Mustar*, a variant of Mode 6. In Mode 2, one of the two Phthorai is placed on the primary

function notes, and the other one on the secondary function notes (Mode 2 is based on Diphonic system).



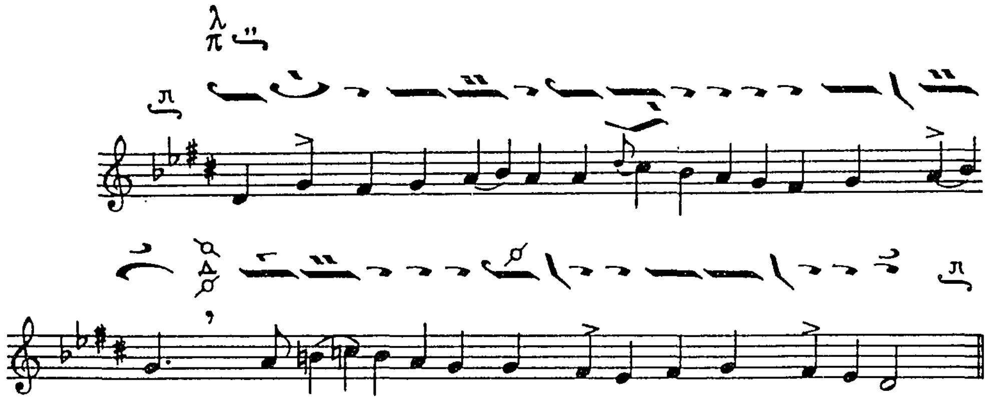
In Mode 6, one of the Phthorai is placed on Pa and Ke, and the other on Di and Pa'. The Phthora for Mode *Mustar* is placed on Di.

3. There are five enharmonic Phthorai: *Agem* , *Nisabur* , *General diez* , *General ifes* , and *Hysar*  . Each one of these Phthorai is placed on specific notes: *Agem* is placed on Ga and Zo, *Nisabur* is placed on Di, *General diez* is placed on Ga, *General ifes* is placed on Ke, and *Hysar* is placed on Ke. The reason for selective placement of Phthorai above certain notes is that these notes are preceded and/or followed by intervals characteristic to the mode to which the Phthora belongs. Phthorai can indicate three operations: 1) modulation, 2) transposition, 3) simultaneous modulation and transposition.

1. Modulation

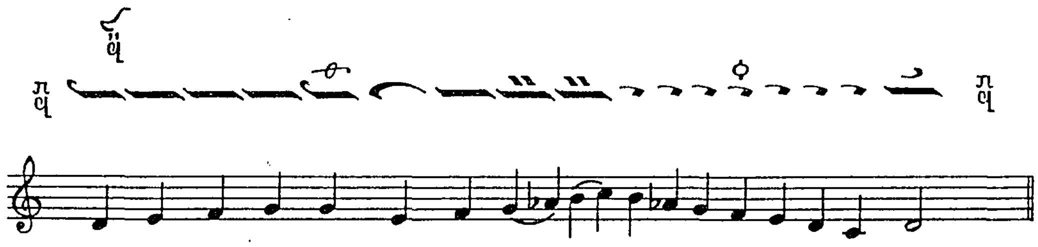
Actual Byzantine modulations are of two types :1) modulation between modes of the same genera, and 2) modulation between modes belonging to different genera. Modulation between modes of the same genera is accomplished by changes in melodic formulae and cadences when the two modes are in the authentic-plagal relationship, and by the indications of Martyria Neumes when the two modes are not in the authentic-plagal relationship. Modulation between modes belonging to different genera is accomplished by the Phthorai Neumes. For instance, during the chant of Example 3-15, which is in chromatic Mode 6 with the modal fundamental on Pa. Above the Martyria Neume indicating Di at the beginning of the second line, the Phthora of Di diatonic is place. This indicates that from this place forward the chant will be performed according with the intervalic pattern and functionality of one of the diatonic modes with the fundamental on Pa. Since both, Mode 1 and Mode 4 have their fundamentals on Pa, it is up to the specific melodic formulae and cadences to determine in which of these two modes the modulation was actually made. The diatonic passage in Example 3-15 is to short to reveal clearly the goal of the modulation made, but the seven note passage seems to emphasize Di and Zo, both notes with a primary function in Mode 4. The Phthora of Di from chromatic Mode 6 is placed above the seventh note from the point of the first modulation. This indicates that from this note forward, the chant returns to the intonation of chromatic Mode 6.

Example 3-15



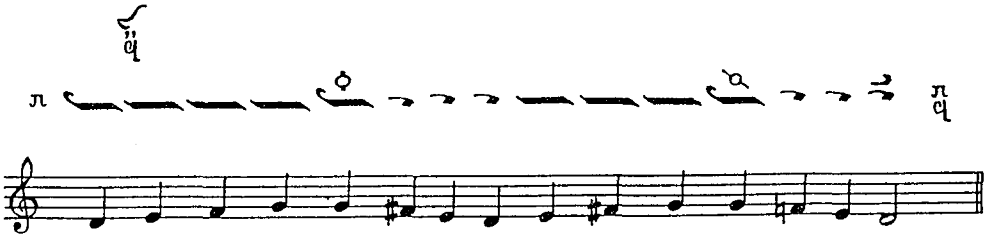
Example 3-16 begins in diatonic Mode 1, modulates in chromatic Mode 2 and returns to diatonic Mode 1.

Example 3-16



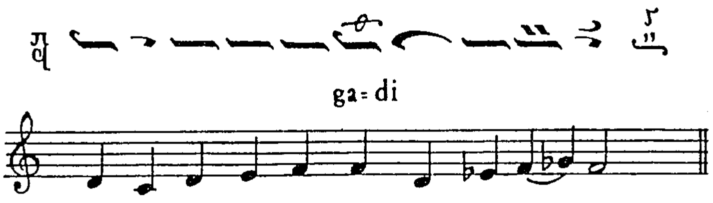
2. Transposition is the process by which the intervalic organization and functionality of a mode changes to another pitch. Transposition does not involve the change of mode or genera. It is done by placing the Phthora of a certain pitch above another pitch. Example 3-17 is a chant in Mode 1. Above the fifth note, a Di, the Phthora of diatonic Ga is placed indicating that from this point, Mode 1 is transposed one step up. Five notes before the end of Example 3-17, the Phthora of Ga is placed above Ga, indicating the return of Mode 1 to the initial pitch level.

Example 3-17



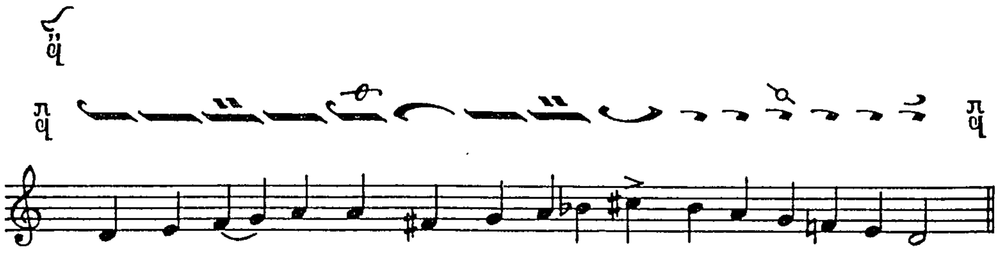
3. Simultaneous modulation and transposition are obtained when the Phthora of another genus and pitch, is placed above a chosen pitch. Example 3-18 shows a simultaneous modulation and transposition. The chant starts in diatonic Mode 1. Above the sixth note, a Ga, the Phthora of Di from chromatic Mode 2 is placed, indicating the modulation to chromatic Mode 2, and in the same time the transposition of Mode 2 one step down.

Example 3-18



Example 3-19 starts in diatonic Mode 1. Above the sixth note, a Ke, the Phthora of Di from chromatic Mode 2 is placed, indicating the modulation to Mode 2 and the transposition of Mode 2 one step up.

Example 3-19



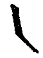
Secondary Phthorai

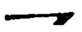
Secondary Phthorai control the intonation of the notes above which they are placed, in the same manner of the flats or sharps of Western notation, which are placed before a note (not at the key signature) control the intonation of these pitches. The flat or sharp affects the intonation of the note before it is placed and additionally every note of the same degree until the next bar line or until a new alteration sign. The secondary Phthorai affect only the intonation of the notes above which they are placed.

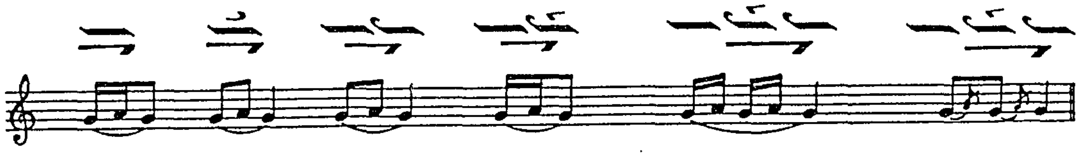
- raise the intonation with 3 Madytos degrees
- raise the intonation with 6 Madytos degrees
- raise the intonation with 9 Madytos degrees
- lowers the intonation with 3 Madytos degrees
- lowers the intonation with 6 Madytos degrees
- lowers the intonation with 9 Madytos degrees

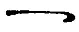
Ornamental Neumes

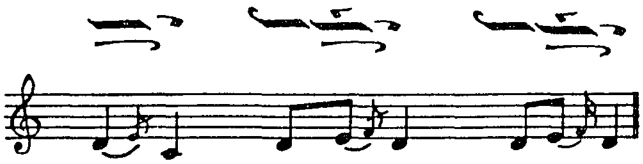
The late Medio-Byzantine Period was characterized by hyperornamentation of melodies. Therefore, the late Medio-Byzantine notation, known as Koukouzelean Notation, developed a large number of Ornamental Neumes. Following the reform that took place at the beginning of the nineteenth century, Neo-Byzantine notation, which was known as Chrysantean Notation, retained only six of these Ornamental Neumes. They accompany the Diastematic Neumes, indicating various modifications of pitch and rhythm.

 *Varia* is placed at the same level with Diastematic Neumes and indicates a soft accent to the note that follows. It is used only before neumes indicating unison (*Ison)*, or stepwise motion. *Varia* is also used as part of the compound neumes indicating rests, as presented above (see Temporal Neumes).

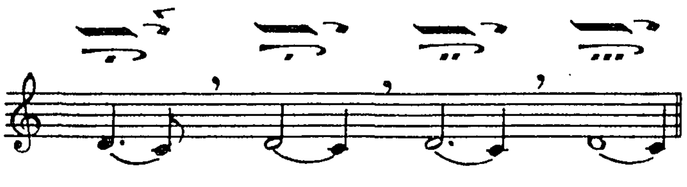
 *Omalon* indicates an upper neighbor tone motion with a very sustained legato. It is always placed below the Diastematic Neumes.



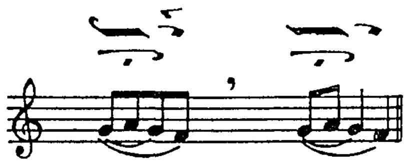
 *Antichenoma* is placed below *Oligon* and followed by a descending sign. It has the effect of an escape tone with a careful legato and controlled glissando for its descending portion.

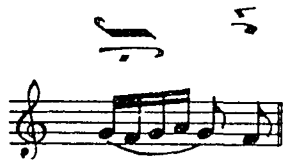


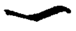
When *Antichenoma* has *Omalon* above and *Aple* below and additionally is followed by *Epistroph*, then it indicates a very legato execution with a careful glissando.

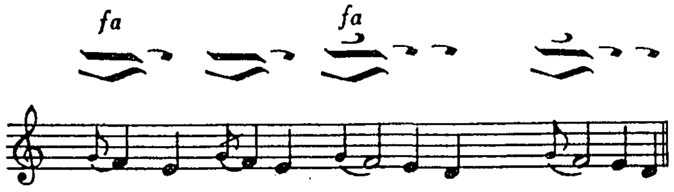


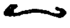
A few variants for the execution of *Antichenoma* are shown below.

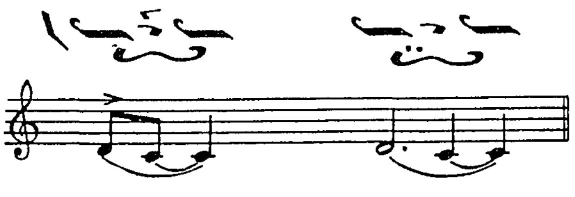


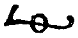


 *Psyphiston* placed under *Ison, Oligon, Petaste* or *Kentemas* indicates the execution similar to an upper appoggiatura.



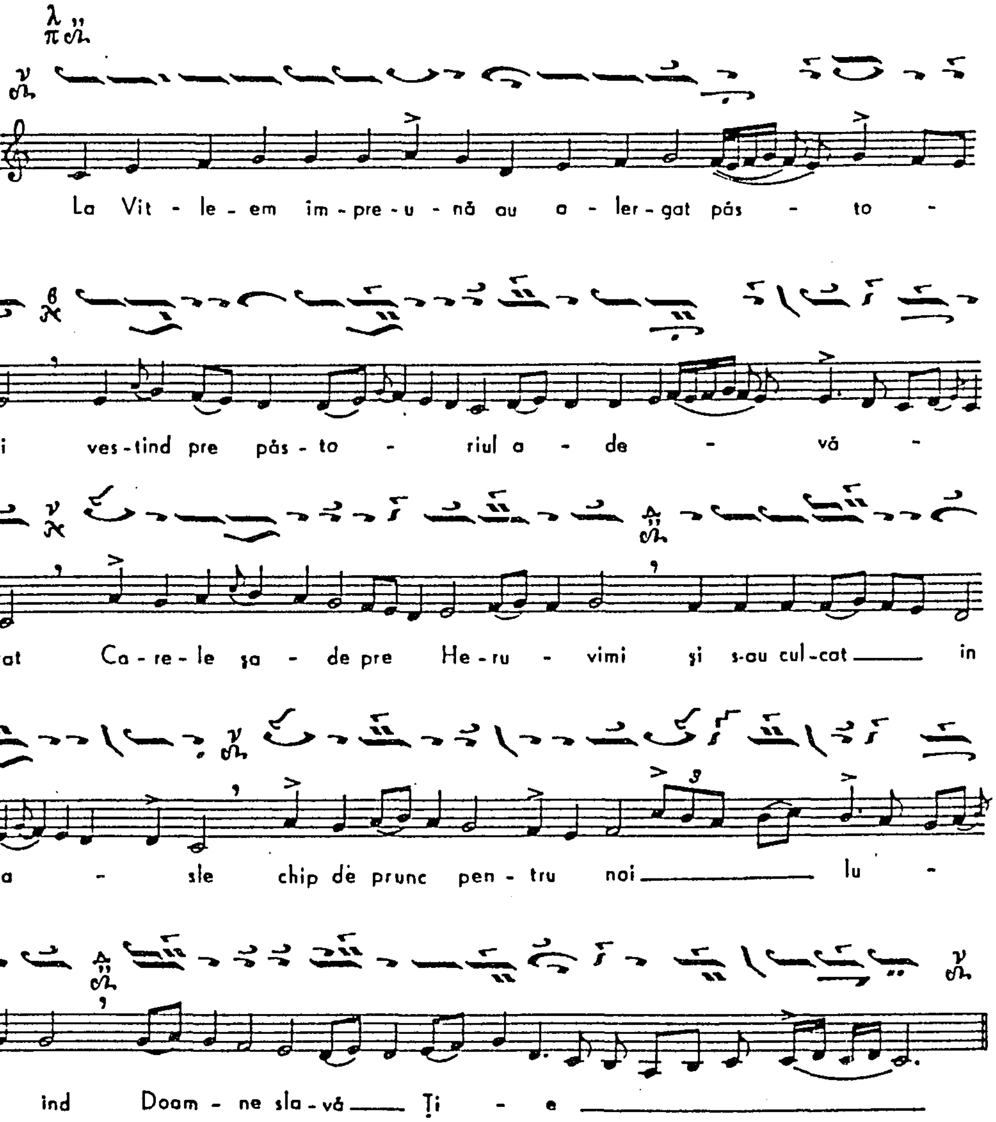
 *Eteron* indicates a legato for the notes it unites like a bracket.



 *Endophon* indicates that the notes above this sign must be performed with closed mouth. This neume appears very rarely in Neo-Byzantine manuscripts.

Examples 3-20 and 3-21, with Romanian text, illustrate the use of some of the Ornamental Neumes and their transcription in Western notation.

Example 3-20[112]


La Vit - le - em im - pre - u - nă au a - ler - gat păs - to -
ri ves - tind pre păs - to - riul a - de - vă -
rat Ca - re - le şa - de pre He - ru - vimi şi s-au cul - cat in
ia - sle chip de prunc pen - tru noi lu -
ind Doam - ne sla - vă Ţi - e

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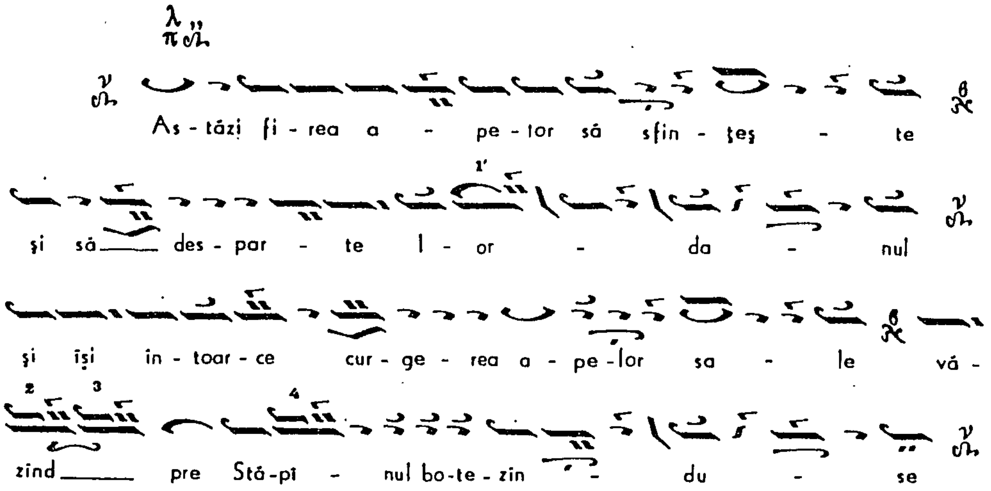
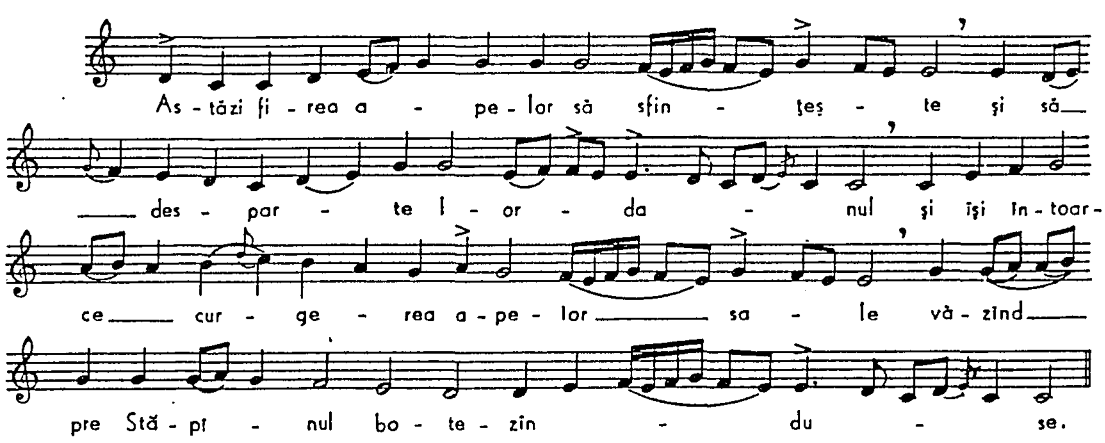
[112] Dumitru Suceveanu, *Idiomelar*, (Iasi: In tipografia Mitropolie, 1848), 244

Example 3-21[113]


As - tăzi fi - rea a - pe - lor să sfin - țeș - te
și să des - par - te I - or - da - nul
și își în - toar - ce cur - ge - rea a - pe - lor sa - le vă -
zînd pre Stă - pî - nul bo - te - zin - du - se


As - tăzi fi - rea a - pe - lor să sfin - țeș - te și să
des - par - te I - or - da - nul și își în - toar -
ce cur - ge - rea a - pe - lor sa - le vă - zînd
pre Stă - pî - nul bo - te - zin - du - se.

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[113] Ibid., 16.

CHAPTER 4

A STUDY OF BYZANTINE MODES

In the first chapter, a conclusion was made which indicated that the identity of a Byzantine mode can not be based solely on the modal scale. A complete theory of these modes must also include a study of 1) the functionality of different scale degrees, 2) melodic formulae and cadences, 3) intonation formulae, and 4) the different structural variants specific for each idiom of Byzantine chant. In this chapter each of the eight modes will be separately studied. Because the relationship between authentic and plagal forms of most of these modes, the order of presentation will follow this format: Mode 1, Mode 5, Mode 2, Mode 6, Mode 3, Mode 7, Mode 4, and Mode 8. Each mode will be examined from six perspectives.

1. Modal scale

Several theoretical aspects related to each modal scale will be presented in this discussion:

- a graphical representation of the scale with the particular intervals between scale degrees using the octave division in 68 degrees by Madytos,

- the individual Martyria Neumes corresponding to each note,

- the Great Martyria indicating the modal signature,

- a transcription of the modal scale in western notation including the modal signature.

2. The intonation formula

This short melodic passage which encapsulates the character and *ethos* of the mode will be presented in Byzantine notation along with its western transcription.

3. The functionality of different scale degrees

This discussion will include the system on which the construction of the scale is based (diphonic, triphonic, tetraphonic, diapason), and the identification of pitches with principal function: modal fundamental, modal dominants, subtone, and cadential pitches.

4. Melodic formulae and cadences

The size and shape of the formulae for any given mode can vary greatly However, it will be illustrated that the formulae for a particular mode will follow similar patterns.

5. Modal variants

Most of the modes use different scales and systems of scale formation for the different idioms of Byzantine chant. There are also secondary modal scales which are derived from the main modal scale. These variant modes will be studied in connection with Sticheraric, Hirmologic and Papadike chants. A study of modal variants in Recitative chant will not be considered since this idiom uses a very limited number of pitches.

6. Musical examples

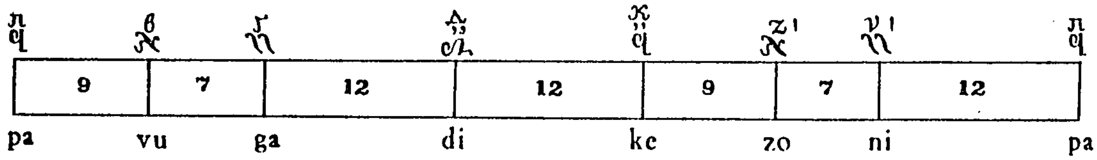
Examples of chants from all stylistic periods will be provided for each mode. The theoretical focus of this study is the Neo-Byzantine modes. However, some brief comments will be offered for examples from Paleo and Medio-Byzantine periods, with the theoretical emphasis on the evolution of these modes. Most of the examples will be presented in Byzantine notation along with their transcription in western notation. Transcriptions of Paleo-Byzantine and Medio-Byzantine chants will use the eighth ♪ note as equivalent with the standard durational unit, while transcriptions of Neo-Byzantine chants will use the quarter note ♩ to represent the standard durational unit.

Mode 1 (*Protos*)

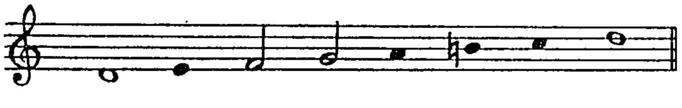
Mode 1 belongs to the diatonic genus. Tradition has labeled it the Dorian Mode but the intervals of its scale correspond to the Greek Phrygian Mode.

Modal Scale

This mode[114] uses three types of intervals between consecutive notes: *Mizon*--a large tone comprised of twelve degrees, *Elasson*--a small tone comprised of nine degrees, and *Elahistos*--a smallest tone comprised of seven degrees.



In a transcription of Byzantine chant into western equal temperament tuning, the modal scale is based on D and has only two types of intervals: the minor



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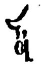
[114] The three types of intervals described are commun for all diatonic mode.

second comprised of two quartertones and the major second comprised of four quartertones.

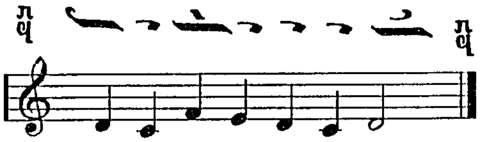
The following Great Martyria Neume represents the modal signature for Mode 1. 

Transcriptions of Byzantine chants of mode 1 in western notation use a key signature without any sharps of flats.

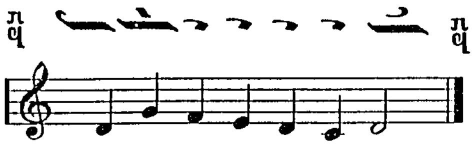
Intonation Formulae

There are two intonation formulae:

- intonation formula for Sticheraric and Papadike chants which emphasize the modal dominant Ga (F) and the subtone--fundamental relationship

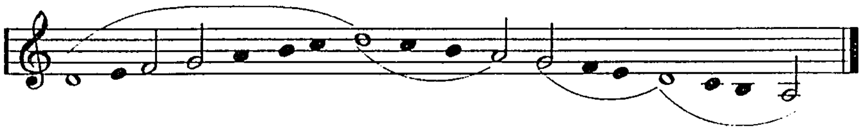


- intonation formula for Hirmologic chant which emphasize the modal dominant Di (G) and the subtone--fundamental relationship.



Functionality of scale degrees

The modal fundamental is Pa (D). For Sticheraric chants the modal dominant is Ga (F), for Hirmologic chants it is Di (G) and Ni (C), and for Papadike chants it becomes Ga and Di. Hirmologic chants in mode 1 rarely use the Subtone-Fundamental relationship, therefore the Subtone Ni (C) below the modal fundamental does carry a primary function only in Sticheraric and Papadike chants. The ascending scale of mode 1 is based on the Diapason system, but the descending scale is based on the conjunction of two tetrachords Pa' - Ke, Di - Pa, connected by *diazeuxis.*[115]



In some Hirmologic chants Ni becomes a second dominant due to the flattening of Zo (B) and the transformation of the descending scale after the triphonic system (two tetrachords connected by *synaphé*, the diapason is completed in its superior portion by *proslambanomenos*).

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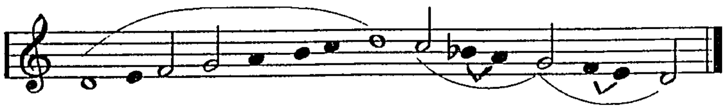
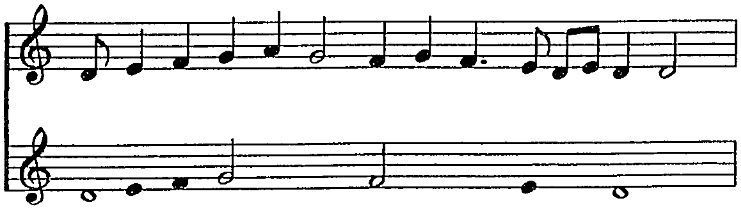
[115] The formation of descending scale of mode 1is identical with that of Greek system of modal scale formation.



Melodic formulae and cadences

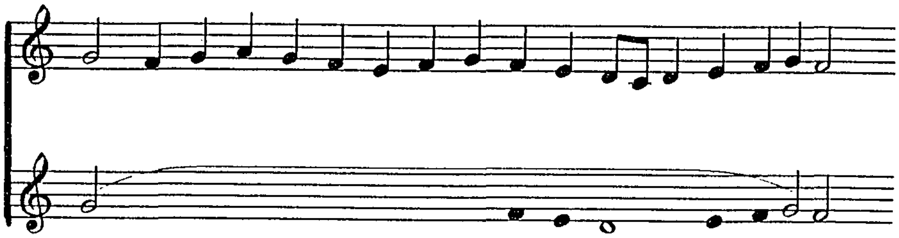
Melodic contours created by the various formulae essentially connect the pitches which have principal function. In any given mode there are two types of formulae.

1. Formulae that start and end on the same pitch maintain the melodic polarity around a particular pitch. For instance, a formula starting on the fundamental Pa, may rise by stepwise motion to dominant Di, then move to dominant Ga, and finally return to fundamental Pa.



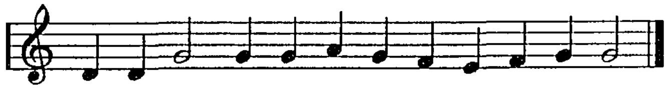
2. Formulae that start and end on different pitches change the center of melodic polarity. For instance, a formula might start on the dominant Di,

descend to the fundamental Pa and rise to dominant Ga. As a result the melodic polarity will move from an initial dominant Di to a new dominant Ga.

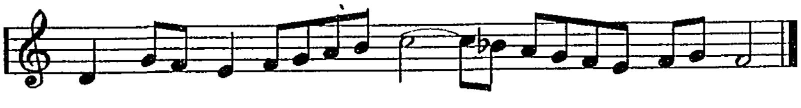


Other possible formulae in mode 1 include the following examples:

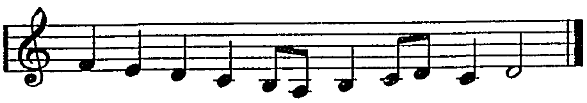
- starting on Pa and ending on Di



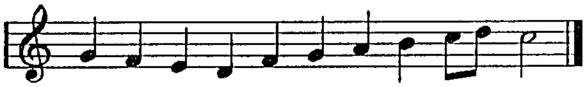
- starting on Pa and ending on Ga



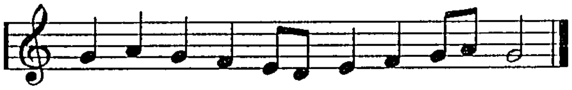
- starting on Ga and ending on Di



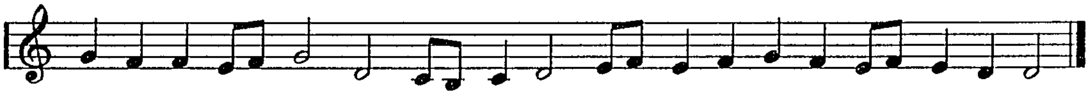
starting on Di and ending on Ni



- starting on Di and ending on Di



- starting on Di and ending on Pa



All perfect cadences[116] and the final cadence occur on the modal fundamental Pa. Imperfect cadences may occur on Ga, Di, and Ni. In Papadike chant imperfect cadences may also occur on Ke and Zo.

Example 4-1[117] is a chant from late Paleo-Byzantine Period (beginning of twelfth century). The analysis of this chant reveals that the system of scale formation for mode 1 in Paleo-Byzantine Period utilized the conjunction of a pentachord and a tetrachord, resulting in a the dominant a fifth above the fundamental. This, of course, is similar to the system of scale formation in the Ambrosian and Gregorian Modes.

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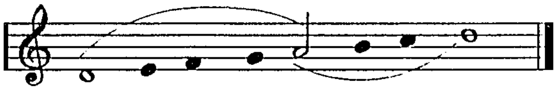
[116] For a discussion of perfect and imperfect melodic cadences in Byzantine music see Chapter 2.

[117] Grigore Pantiru, *Notatia si ehurile muzicii bizantine*,(Bucharest, Editura muzicala a uniunii compositorilor, 1971) 24.



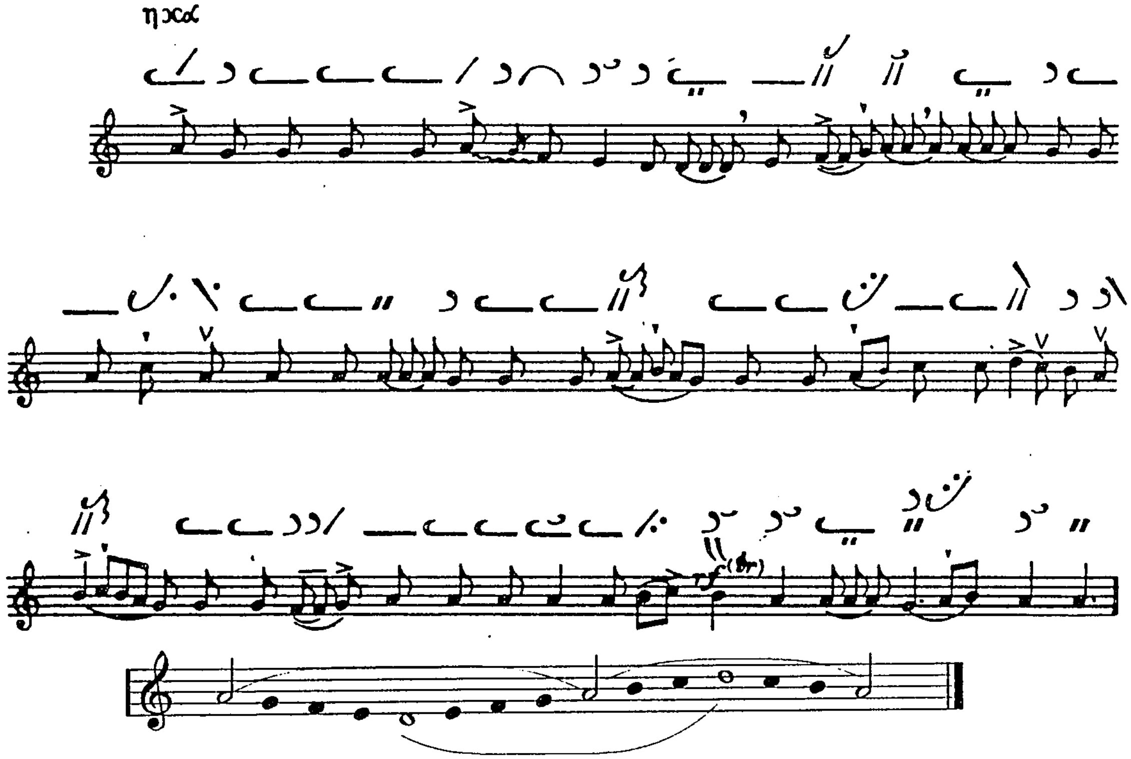
The Martyria Neume at the beginning of the chant indicates mode 1, ηχοξ α.[118] that is *echos* α. There is no indication of the reference pitch, but in accordance with the tradition, the reference pitch was always the dominant Ke.[119] The first diastematic neume is the *Ison* with *Oxia*, indicating that the first note is at the interval of the unison with Ke, the reference pitch, and it receives an accent. The emphasis is on the dominant Ke from which the melody of the chant descends to the fundamental Pa, ascends back to Ke, then up to Pa', and finally ends on Ke. This chant uses the entire diapason and clearly delineates the pentachord + tetrachord formation of the modal scale.

---

[118] In Greek echos = mode

[119] Grigore Pantiru, *Notatia si ehurile muzicii bizantine,*(Bucharest: Editura muzicala a uniunii compositorilor, 1971), 22.

Example 4-1



Example 4-2 is also a chant from the Paleo-Byzantine period. The emphasis is balanced between the fundamental Pa and the dominant Ke. The final cadence is on Ke. This chant uses mostly the lower pentachord of the modal scale. A transcription of this chant in western notation was done by Father I. D. Petrescu[120] after a manuscript (Δ α XIV, folios 228v and 220r) from eleventh century, that was found at the Basilian monastery of Grottaferrata near Rome.

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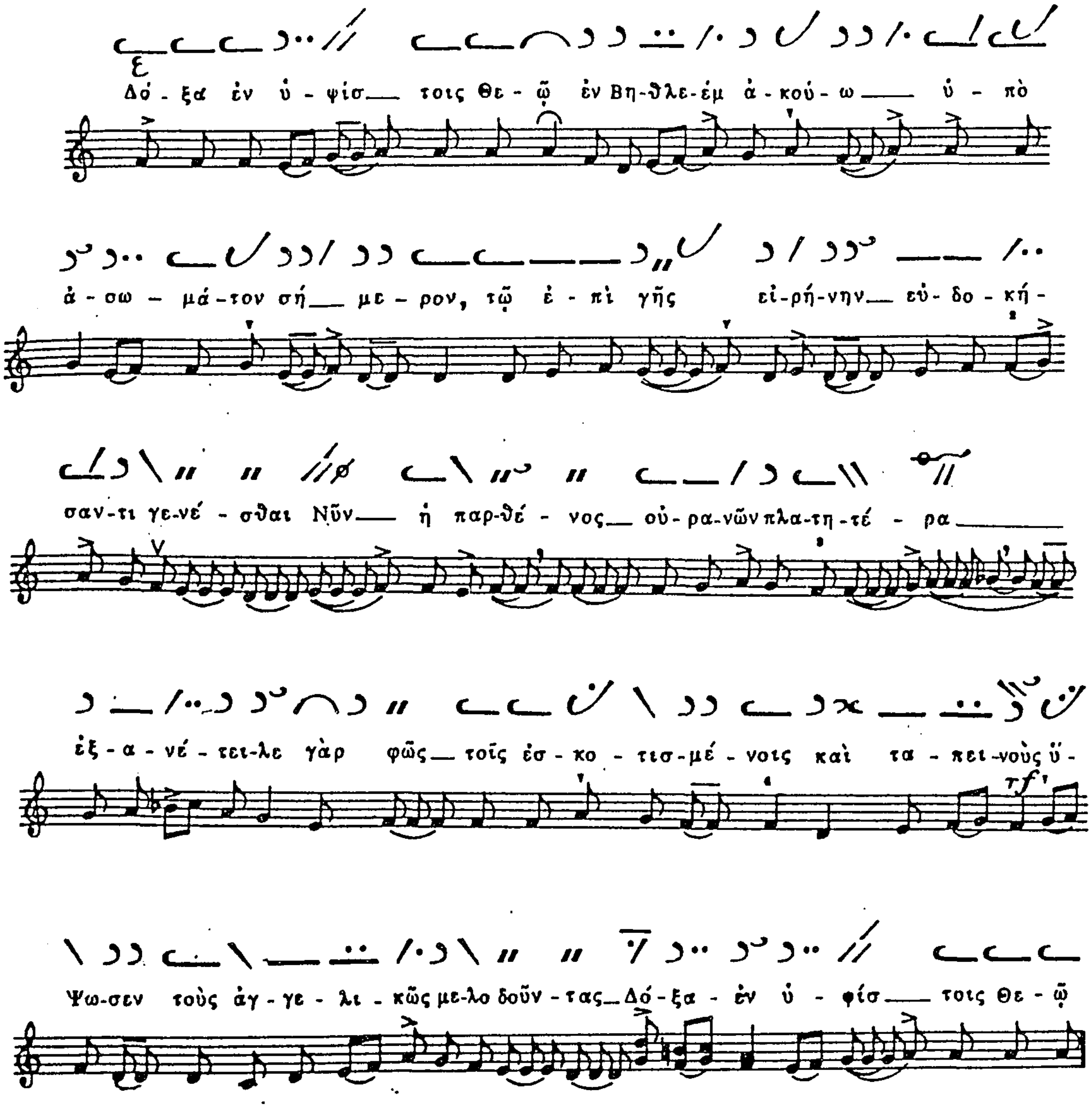
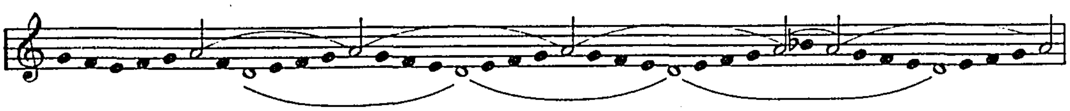
[120] I. D. Petrescu, "Aspecte si probleme ale muzicii bizantine medievale" in *Studii de muzicologie*, I, 1966, 111.

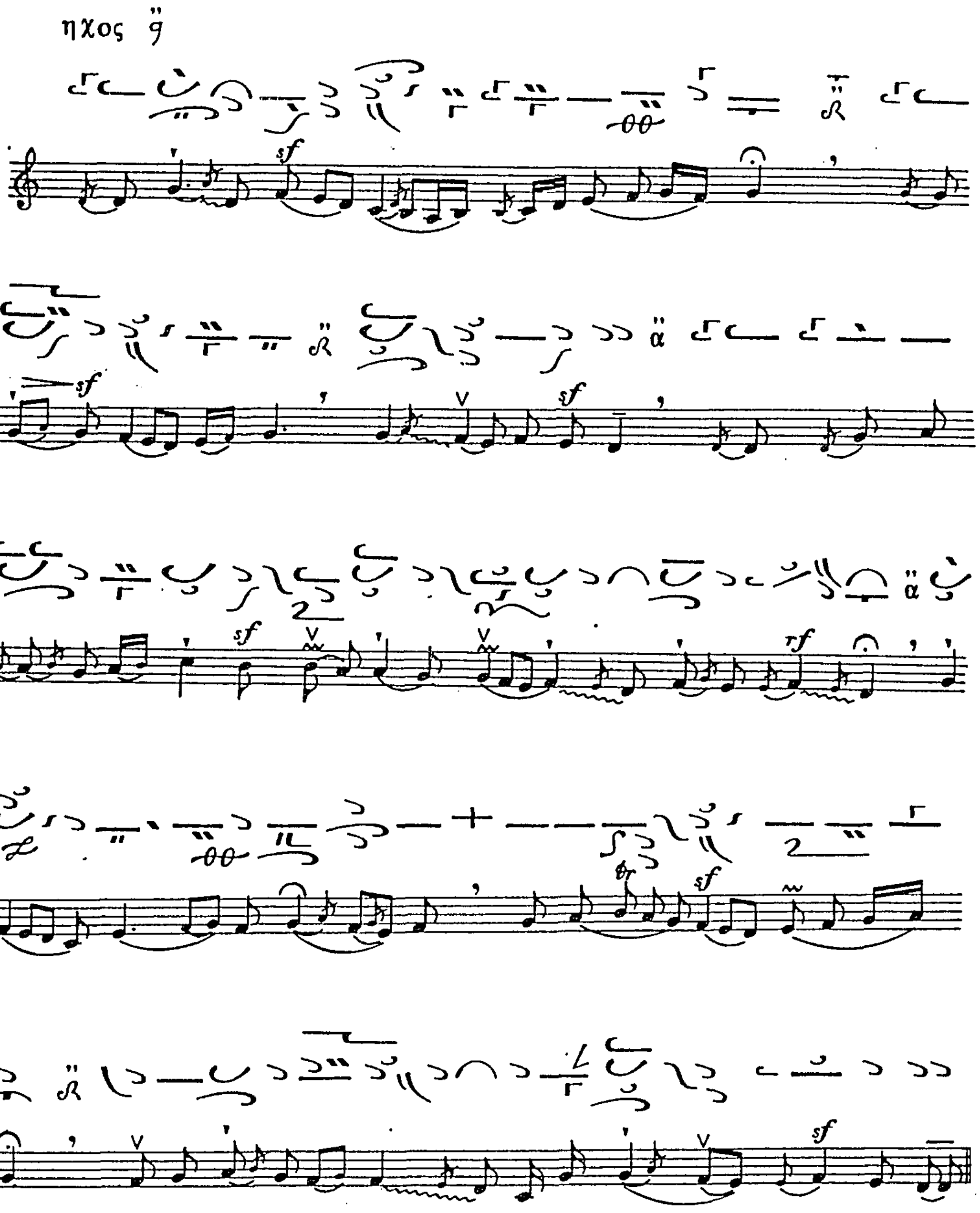
Example 4-2


Δό - ξα ἐν ὑ - ψίσ τοις Θε - ῷ ἐν Βη-θλε-έμ ἀ - κού - ω ὑ - πὸ
ἀ - σω - μά-τον σή με - ρον, τῷ ἐ - πὶ γῆς εἰ-ρή-νην εὐ- δο - κή -
σαν-τι γε-νέ - σθαι Νῦν ἡ παρ-θέ - νος οὐ-ρα-νῶν πλα-τη-τέ - ρα
ἐξ - α - νέ - τει-λε γὰρ φῶς τοῖς ἐσ - κο - τισ-μέ - νοις καὶ τα - πει-νοὺς ὑ -
Ψω-σεν τοὺς ἀγ - γε - λι - κῶς με-λο δοῦν - τας Δό - ξα - ἐν ὑ - ψίσ τοις Θε - ῷ
tr



Example 4-3 is a Hirmologic chant from the Medio-Byzantine Period in Koukouzelean notation with its transcription in western notation. The dominant is Di. The first formula starts on Pa and ends on Di. The second formula starts on Di and ends on Di. The third formula starts on Di and ends on Pa. The fourth formula starts on Pa and ends on Pa. The fifth formula starts on Di and ends on Di. The sixth formula starts with Di (preceded by a lower neighbor appoggiatura) and ends with Pa.

Example 4-3[121]



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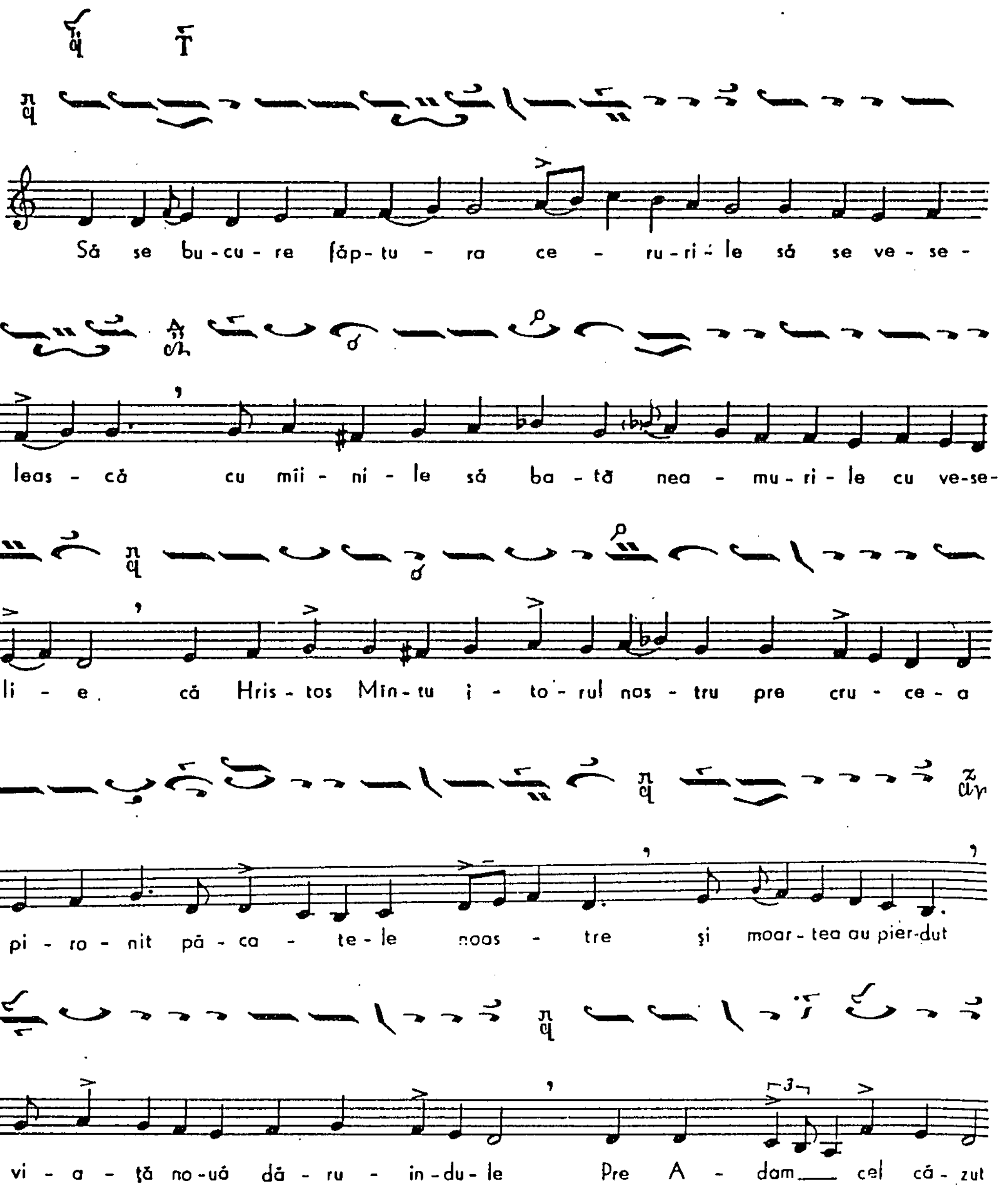
[121] Manuscript No. 61, 8r in Colcction of Byzantine Manuscripts, Bucharest, Romanian Stat Academy

Example 4-4[122] is a Hirmologic chant from Neo-Byzantine period.


Să se bu - cu - re făp - tu - ra ce - ru - ri - le să se ve - se -
leas - că cu mii - ni - le să ba - tă nea - mu - ri - le cu ve-se-
li - e. că Hris - tos Mîn - tu i - to - rul nos - tru pre cru - ce - a
pi - ro - nit pă - ca - te - le noas - tre şi moar - tea au pier-dut
vi - a - ţă no - uă dă - ru - in - du - le Pre A - dam cel că - zut

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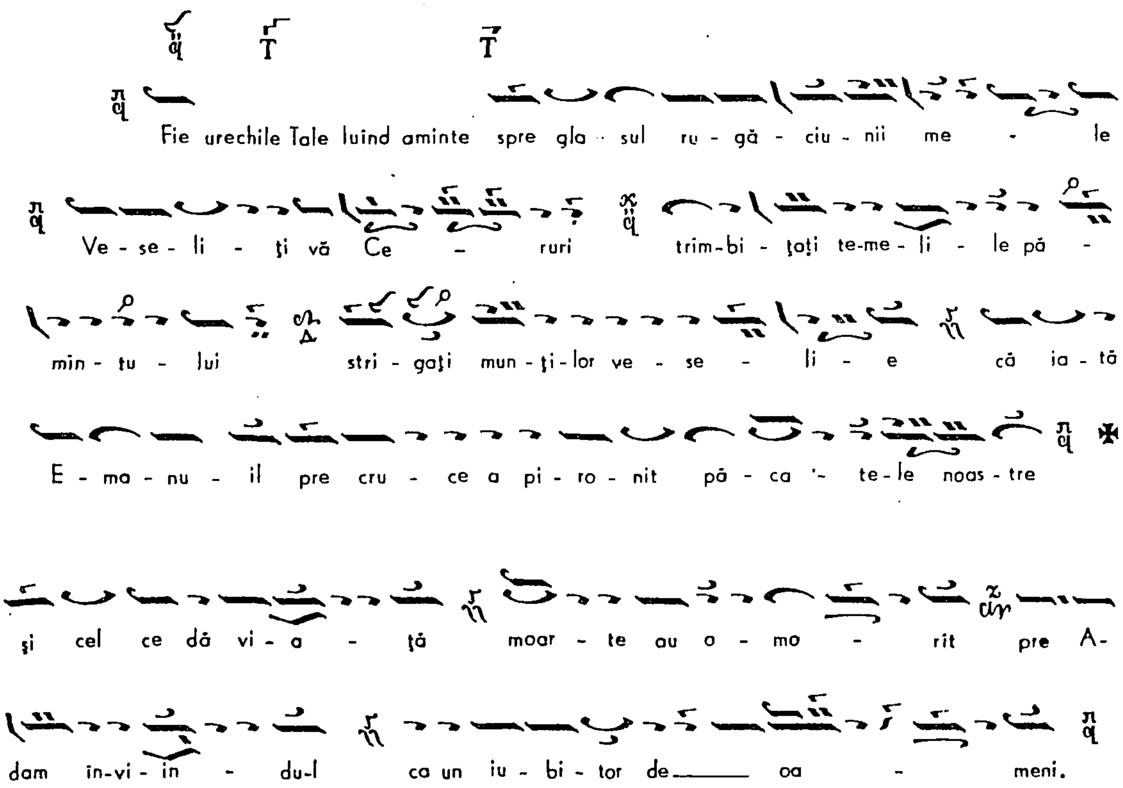
[122] T. V. Stupcanu, *Anastasimatar*, (Bucharest: Tipografia cartilor bisericesti, 1926), 10.

Example 4-5[123] is also a Neo-Byzantine chant. This chant starts with a short Recitative passage and continues in the Sticheraric idiom.

Example 4-5


Fie urechile Tale luind aminte spre gla · sul ru - gă - ciu - nii me - le
Ve - se - li - ţi vă Ce - ruri trim-bi - ţaţi te-me - li - le pă -
min - tu - lui stri - gaţi mun - ţi - lor ve - se - li - e că ia - tă
E - ma - nu - il pre cru - ce a pi - ro - nit pă - ca '- te - le noas - tre
şi cel ce dă vi - a - ţă moar - te au o - mo - rit pre A-
dam in-vi - in - du-l ca un iu - bi - tor de oa - meni.

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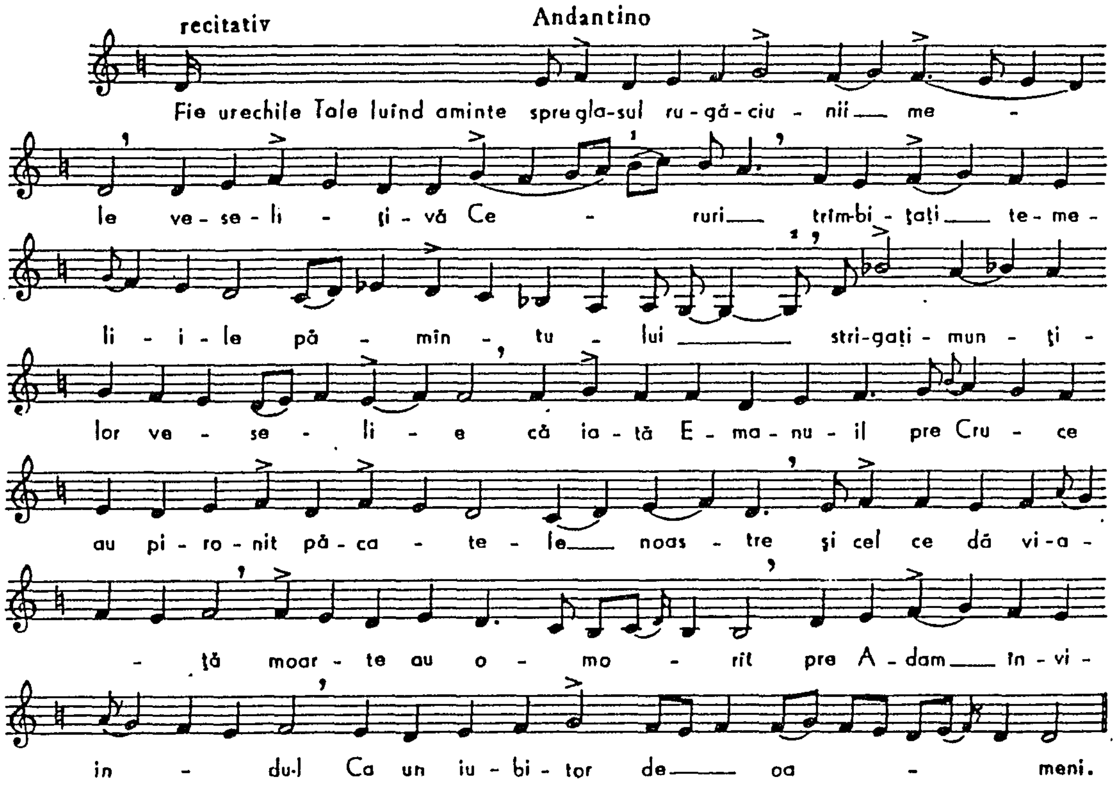
[123] Ibid., 6.

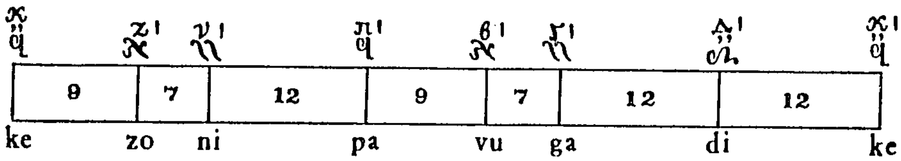

recitativ
Andantino
Fie urechile Tale luînd aminte spre gla-sul ru - gă - ciu - nii — me -
le ve - se - li - ți - vă Ce - ruri — trîm-bi - țați — te - me -
li - i - le pă - mîn - tu - lui — stri-gați - mun - ți -
lor ve - se - li - e că ia - tă E - ma - nu - il pre Cru - ce
au pi - ro - nit pă - ca - te - le — noas - tre și cel ce dă vi - a -
- ță moar - te au o - mo - rit pre A - dam — în - vi -
in - du-l Ca un iu - bi - tor de — oa - meni.

Mode 5 (*Plagios Protos)*

Mode 5 belongs to both, the diatonic and enharmonic genera. The diatonic scale is the plagal form of mode 1 and has the modal fundamental on Ke (A). This scale is used in Hirmologic chants. The enharmonic scale which derives from the scale of mode 1, has its fundamental on Pa (D) and constitutes the pitch material for Sticheraric and Papadike chants in mode 5.

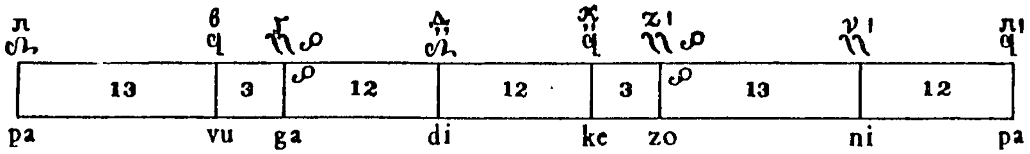
Modal Scale

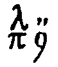
Mode 5, like all diatonic modes, uses three types of intervals between consecutive pitches: 1) the large tone comprised of twelve Madytos degrees, 2) the small tone comprised of nine degrees, and 3) the smallest tone comprised of seven degrees.



In transcriptions of Byzantine chants into western notation (implying equal temperament tuning) the diatonic scale of mode 5 has only two types of intervals: minor and major seconds.

The scale of the enharmonic variant of mode 5 uses three types of intervals: 1) a large tone comprised of twelve degrees, 2) a diminished smallest tone comprised of three degrees and 3) a complementary interval comprised of thirteen degrees.



The following Great Martyria Neume represents the modal signature of Mode 5. 

If Ke follows the Great Martyria Neume, it is understood that the scale is diatonic with the modal fundamental on Ke and the chant is Hirmologic. Therefore, the temporal neumes indicating the idiom and tempo for Hirmologic chant do not appear in most manuscripts of chants in mode 5 Hirmologic. In accordance with the Byzantine tradition, the tempo of Hirmologic chants in mode 5 is faster than Hirmologic chants of the other modes, usually at a M.M. ♩ = 100-110.

If the Great Martyria of mode 5 is followed by Pa, it is understood that the scale is enharmonic with the modal fundamental on Pa. If there is no temporal neume it means that the chant is in Sticheraric idiom. For Papadike chants the appropriate temporal neume is placed to the right of the Great Neume.

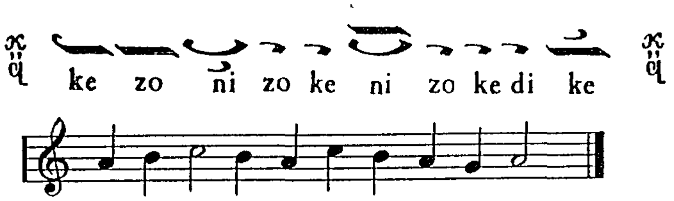
In western notation of equal temperament the key signature for mode 5 diatonic is that without any sharps or flats.

For enharmonic scale the key signature has B♭.

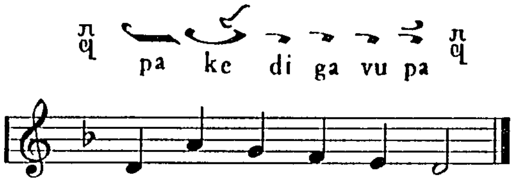
Intonation formula

There are two intonation formulae for mode 1.

1. The following melodic passage is the intonation formula for Hirmologic chant in diatonic mode 5.



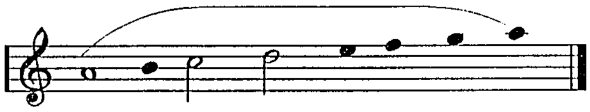
2. The following melodic passage is the intonation formula for Sticheraric and Papadike chants in enharmonic mode 5.



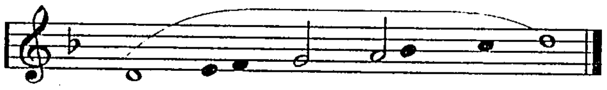
Function of scale degrees

For the diatonic mode 5 the fundamental is Ke, and the dominant is Ni. In some chants Pa' also receives a weak dominant function. Di has a subtone function. For the enharmonic mode 5 the fundamental is Pa and the dominants are Di and Ke. Ni has a weak subtone function because traditionally, its use does not represent the character of enharmonic genera.

The scale of diatonic mode 5 is based on the diapason system.



The scale of the enharmonic mode 5 is based also on the diapason system.

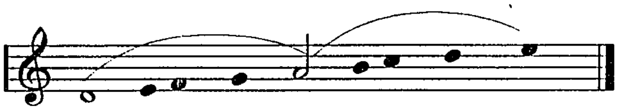


Melodic formulae and Cadences

Melodic formulae of mode 5 are structurally the same as those of mode 1. Melodic formulae of Hirmologic chants in mode 5 are similar with those of mode 1, but transposed a fifth up and emphasize the fundamental Ke and the dominant Ni. Differing from mode 1, the chants in diatonic mode 5 do not use the whole modal scale but only the upper part, from the subtone Di to Pa'. Therefore, only the melodic formulae of mode 1 using the same restricted ambitus are transposed to the diatonic mode 5. The patterns of melodic formulae of enharmonic mode 5 for Sticheraric and Papadike chants are identical with those used in mode 1 but adapted to enharmonic intonation. They emphasize the same pitches Pa, Ga and Di. In diatonic mode 5, perfect and final cadences occur on Ke, and imperfect cadences on Ni and rarely on Pa'. In enharmonic mode 5, perfect and final cadences occur on Pa. Rarely the final cadence occurs on Di. Imperfect cadences occur on Di and Ke.

Examples of chants in mode 5

Example 4-6 [124] is a Sticheraric chant from the Medio-Byzantine Period (fourteenth century) in Hagipolite notation with its transcription in western notation. In the Paleo and Medio-Byzantine periods only the diatonic scale of mode 5 was used. The formation of the modal scale was based on the conjunction of two pentachords with *sinaphé*, Pa - Ke, Ke - Vu'. The modal dominant was at an interval of the fifth above the fundamental.



Because the difficulty of singing in a high register, most of Medio-Byzantine chants in mode 5 were transposed a fifth lower, with the modal fundamental on Pa and the dominant on Ke. Transcriptions in western notation add B♭ to the key signature.

Following the Martyria Neume is a short intonation formula for mode 5. This practice of adding the intonation formula to the Great Martyria was customary in the semiographic system of Medio-Byzantine Period, known as Hagipolite notation.

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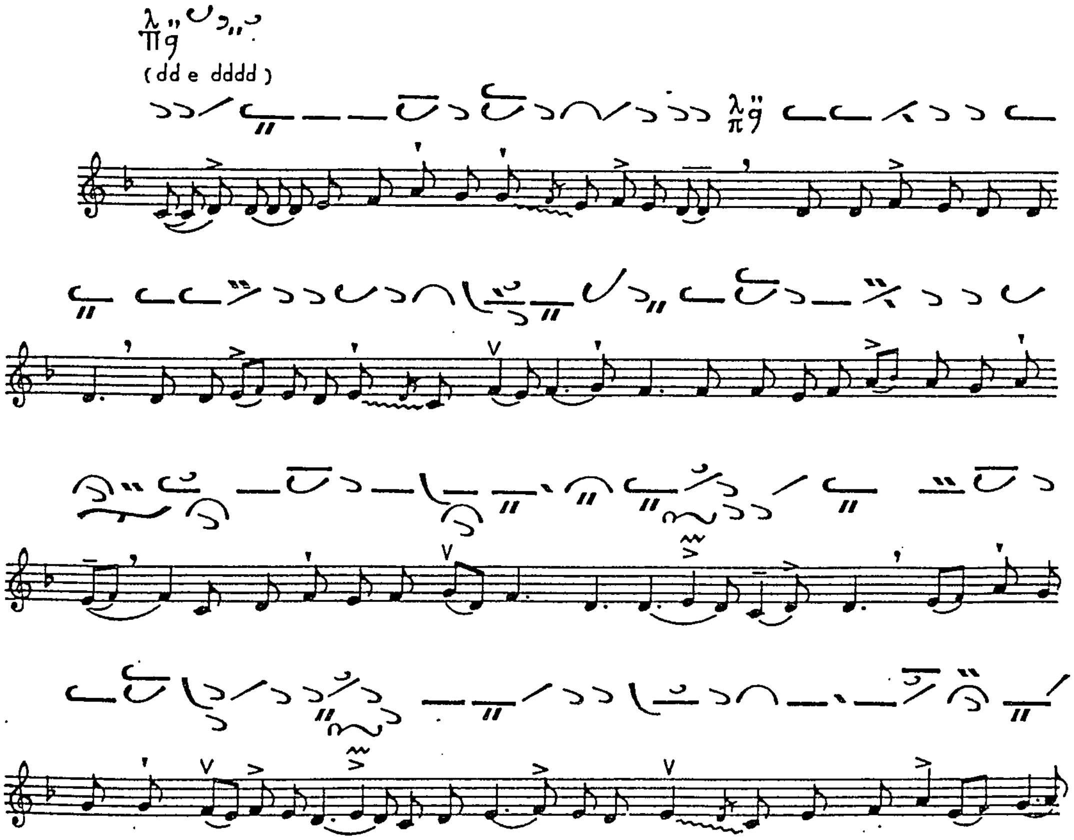
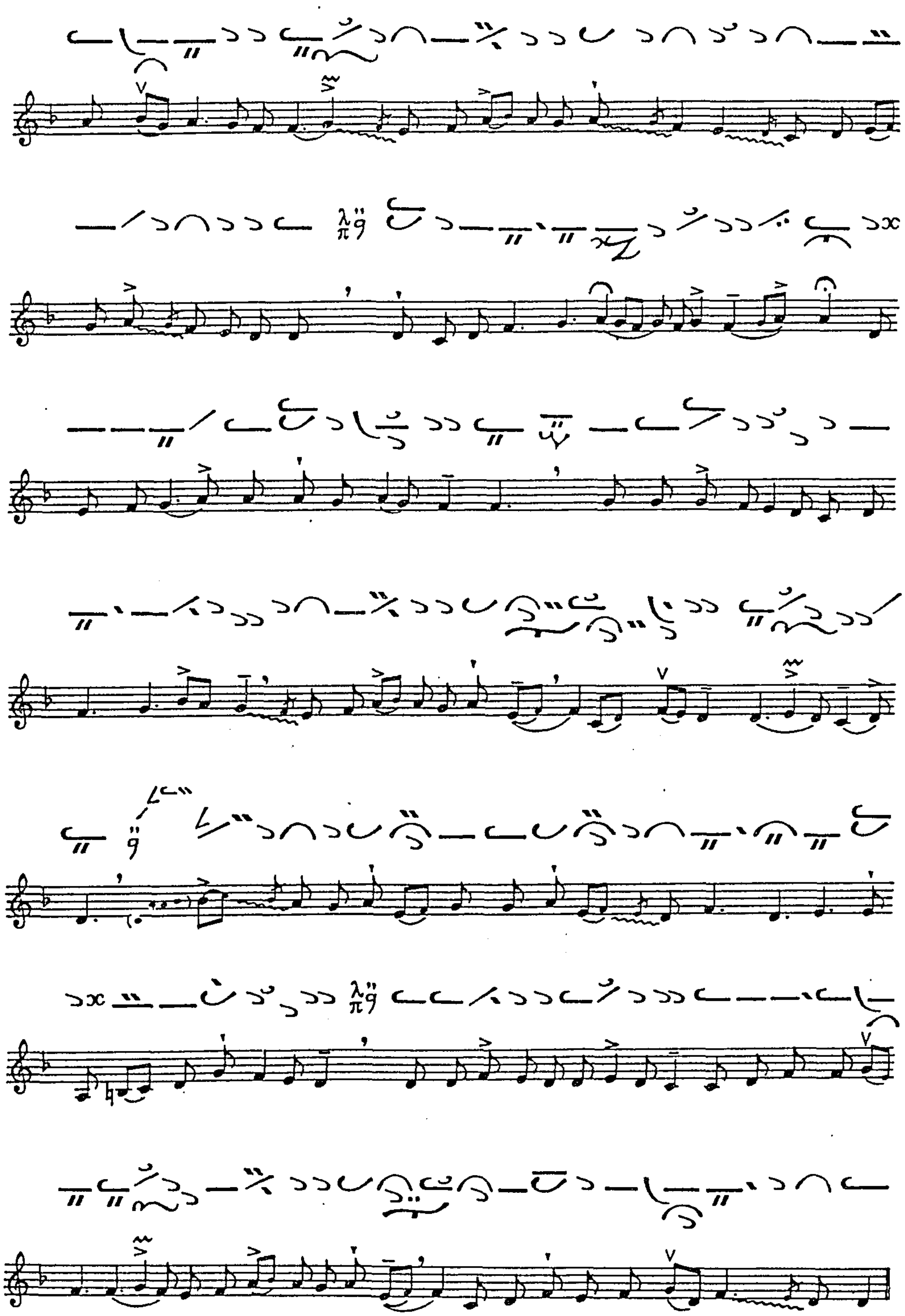
[124] Byzantine manuscript No. 953/220r, Bucharest, Romanian State Academy, Transcribed by Grigore Pantiru, *Notatia si ehurile muzicii bizantine*, (Bucharest: Editura muzicala a uniunii compozitorilor, 1971), 53-54.

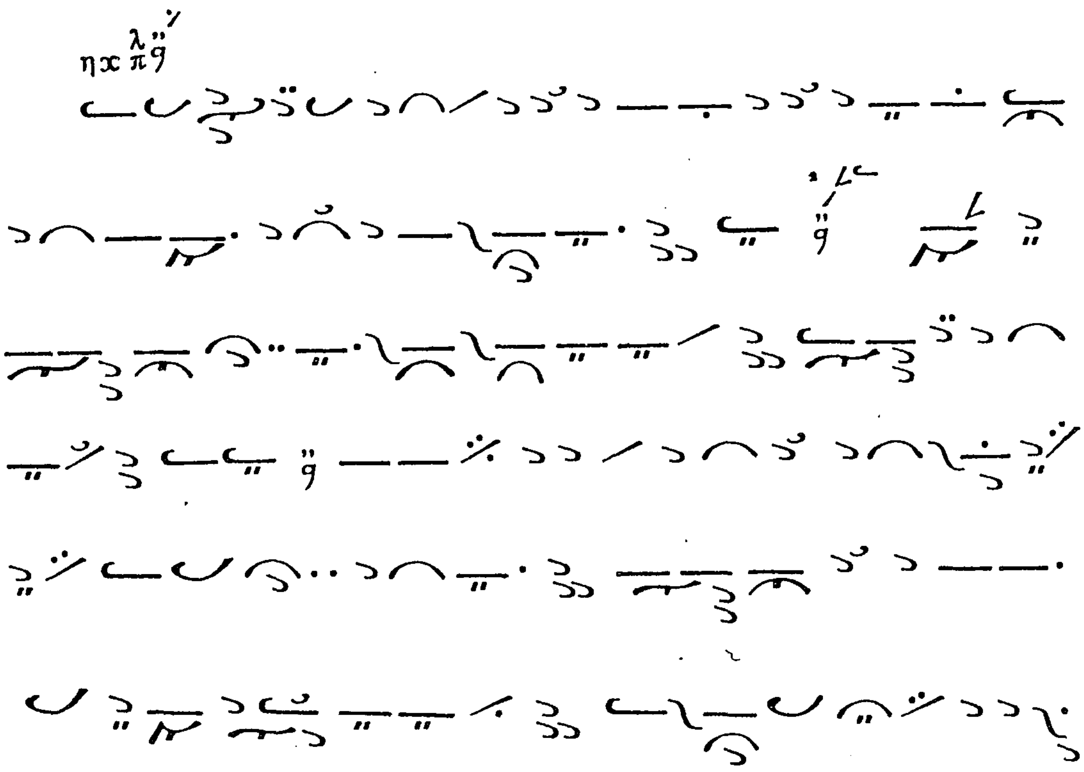
Example 4-6

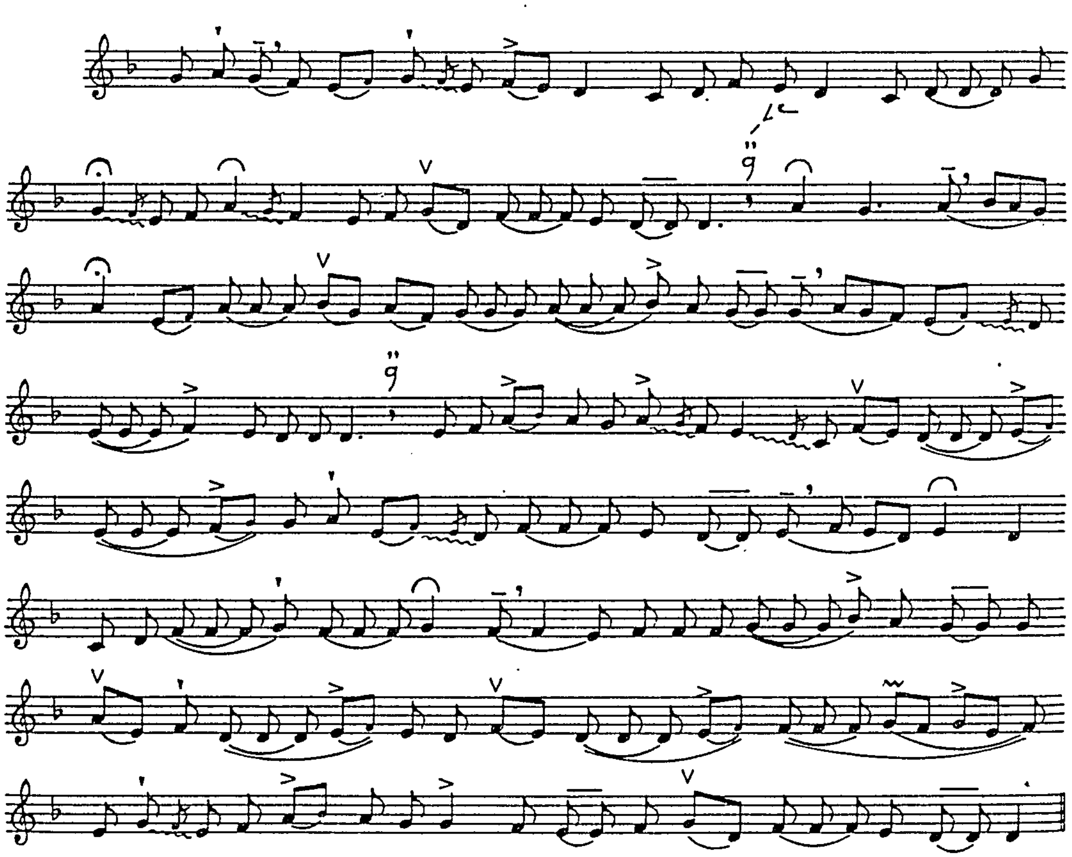




Example 4-7 is a chant from fourteenth century. Its manuscript (No. 39, folio 292r) in Hagipolite notation is part of the collection of Byzantine manuscripts in the Central Library of the University of Iasi, Romania.

Example 4-7





Example 4-8 is a Sticheraric chant from the seventeenth century. The manuscript in Koukouzelean notation is part of a private collection of Byzantine manuscripts belonging to Anton Toma. The transcription below was done by Grigore Pantiru.[125]

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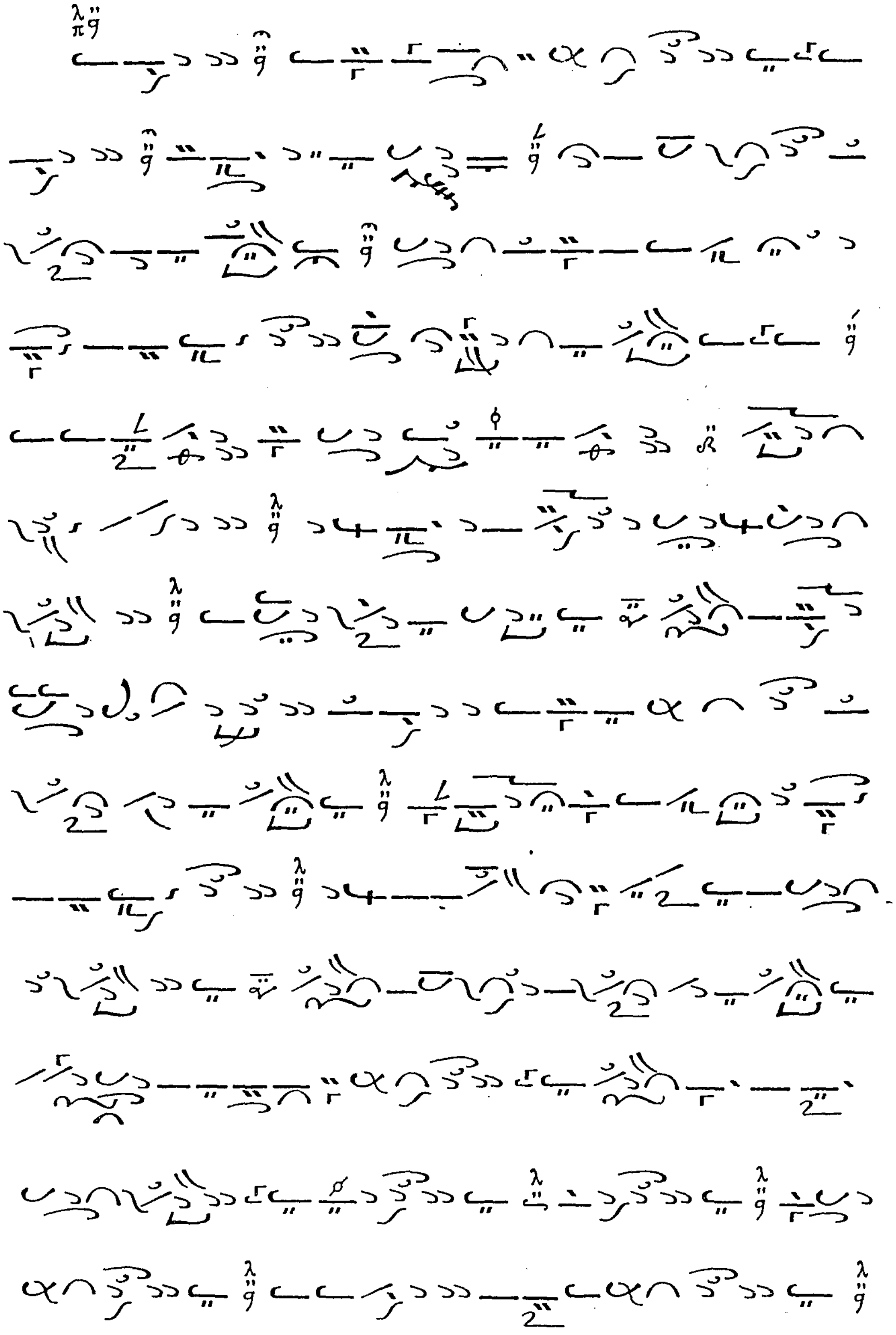
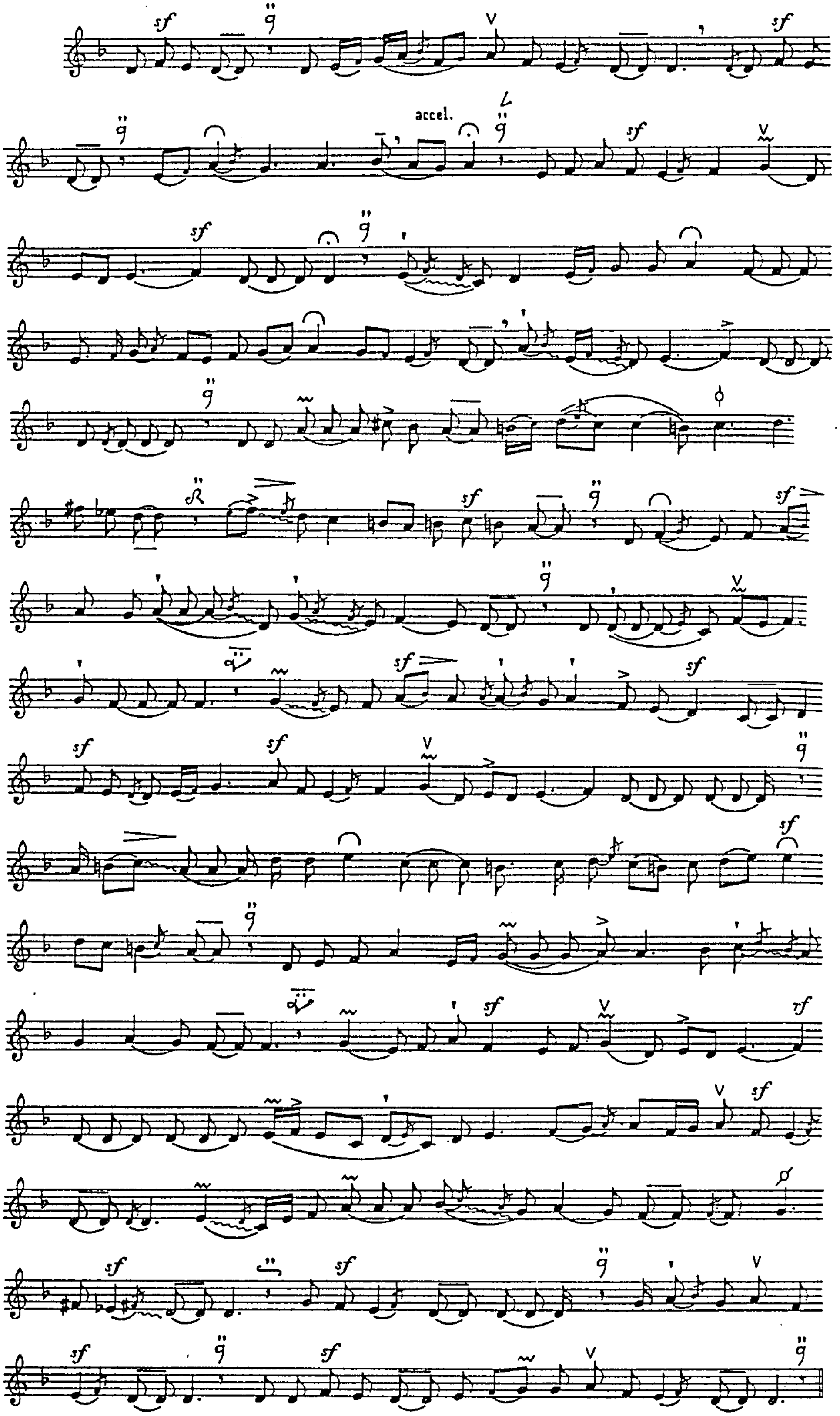
[125] Grigore Pantiru, *Notatia si ehurile muzicii bizantine*, (Bucharest: Editura muzicala a uniunii compozitorilor, 1971) 145-46.

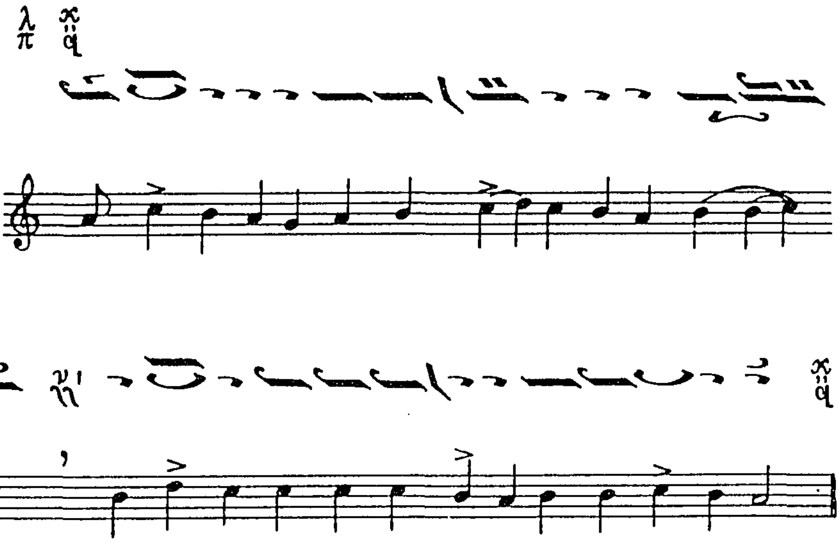
Example 4-8



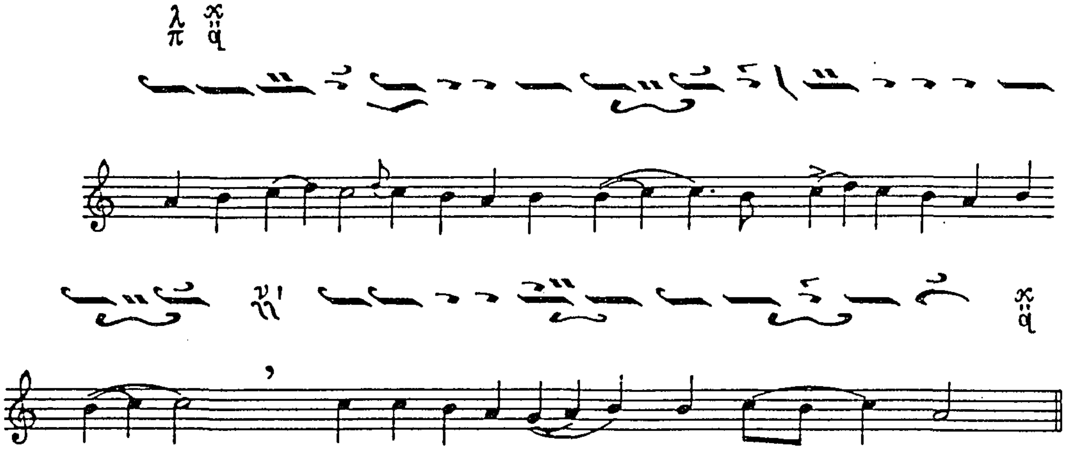

accel.

Examples 4-9 and 4-10[126] are two short Hirmologic chants from the Neo-Byzantine period in mode 5 with the fundamental on Ke and the dominant on Ni.

Example 4-9



Example 4-10



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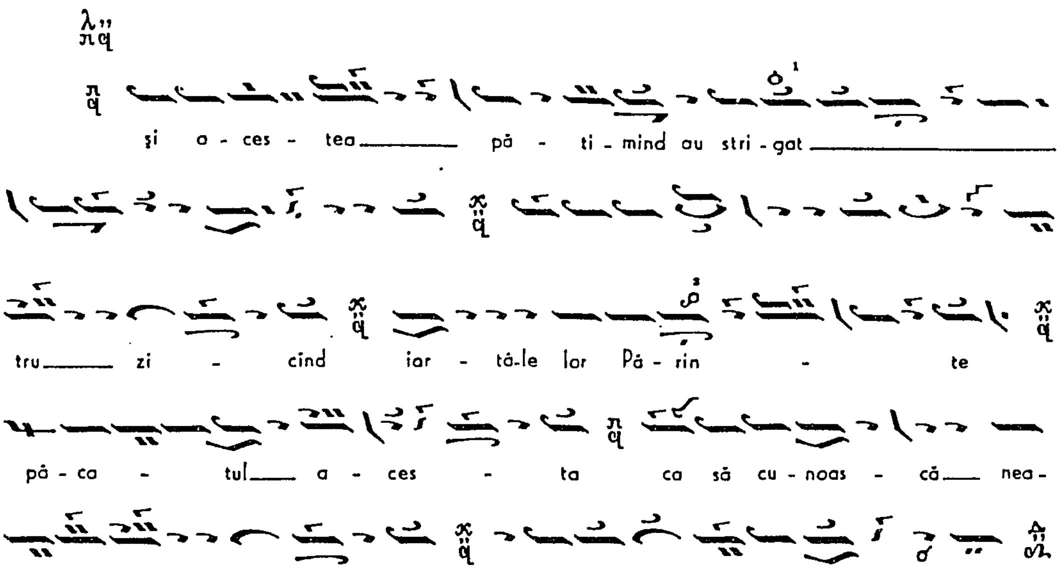
[126] Priest T. V. Stupcanu, *Metoda pentru a invata psaltichia* (Bucharest: Tipografia cartilor bisericesti, 1932), 90.

Example 4-11[127] is a Sticheraric chant from the Neo-Byzantine period in enharmonic mode 5 with the fundamental on Pa and dominants on Ke and Di. The final cadence in this instance is not on the fundamental Pa but on the dominant Di, which implies that within the Byzantine liturgy this chant was to be followed immediately by another chant. In the first line the diatonic phtora of Ke was placed above Ke, the thirteenth diastematic neume. This indicates that from that point forward the intonation follows the diatonic scale. Toward the end of the third line, the enharmonic phtora *agem* was placed above Zo, reestablishing the enharmonic scale.

Example 4-11



şi o - ces - tea ___ pă - ti - mind au stri - gat ___
tru ___ zi - cind iar - tă-le lor Pă - rin - te
pă - ca - tul ___ a - ces - ta ca să cu - noas - că ___ nea -

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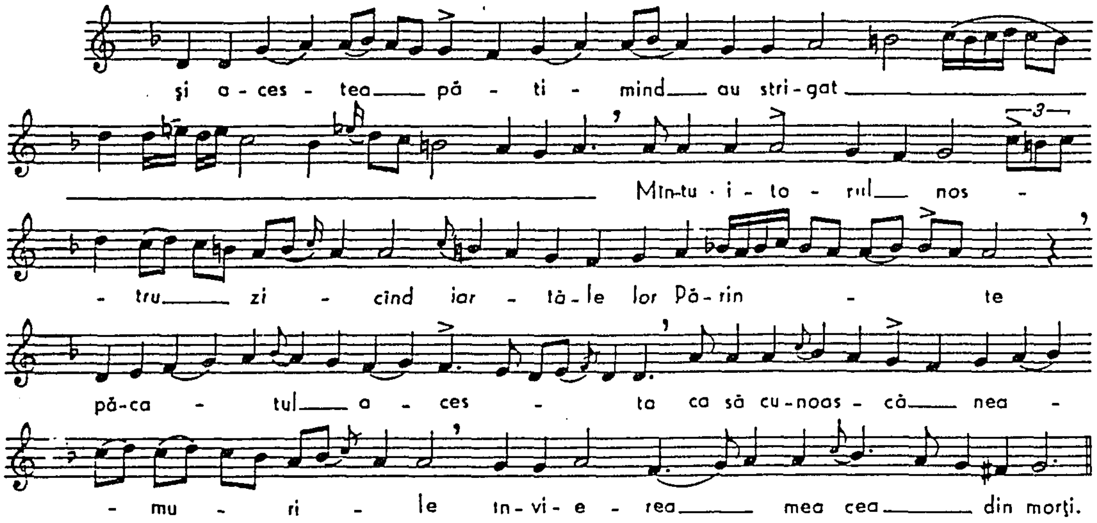
[127] Grigore Pantiru, *Notatia si ehurile muzicii bizantine* (Bucharest: Editura muzicala a uniunii compozitorilor, 1971) 236.



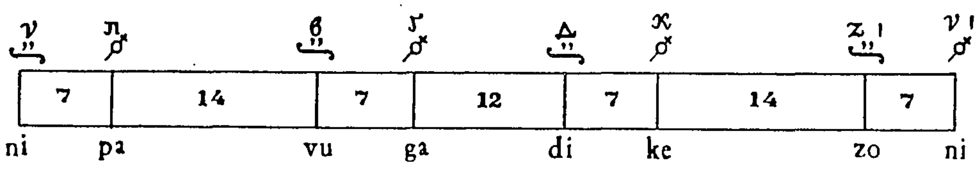
şi a - ces - tea pă - ti - mind au stri - gat
Mîn-tu - i - to - rul nos -
- tru zi - cînd iar - tă - le lor Pă - rin - te
pă-ca - tul a - ces - ta ca să cu-noas - că nea -
- mu - ri - le în - vi - e - rea mea cea din morţi.
3

Mode 2 (*deuteros)*

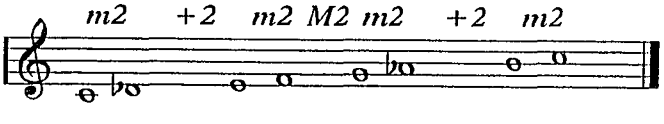
Mode 2 of the Neo-Byzantine period belongs to the chromatic genus. According to the research of Tillyard and Petrescu, during the Pale-Byzantine period, mode 2 originally was a diatonic mode. The first indication of the evolution of this mode towards the chromatic genera are found in manuscripts from the beginning of the fourteenth century. In these manuscripts for the first time the chromatic sigh appeared at the end of some melodic formulae in chants of mode 2. Pantiru suggests that the appearance of this chromatic sign was only a notational confirmation of an already established performance practice. His theory is based on the fact that the melodic formulae receiving the chromatic sign in the fourteenth century were identical in manuscripts of the thirteenth century minus the chromatic sign.

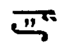
Modal Scale

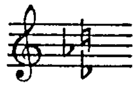
There are three types of intervals between consecutive pitches: the large tone comprised of twelve Madytos degrees, the smallest tone comprised of seven degrees, and the augmented large tone comprised of fourteen degrees.



In transcriptions of Byzantine chants in western notation of equal temperament tuning, there are also three intervals: the minor second, the major second and the augmented second.

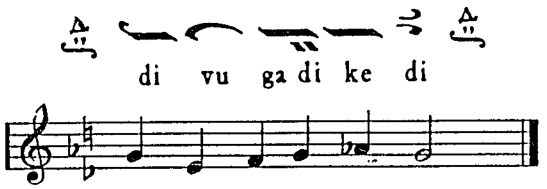


The following Great Martyria semiographicaly identifies mode 2. 

In western notation the key signature has an A♭, D♭, and D'♮. 

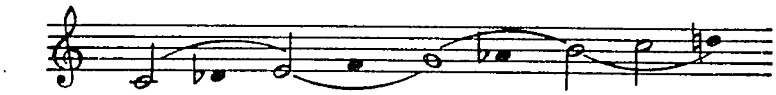
Intonation formula

Mode 2 uses the following intonation formula for chants in all idioms.



Function of scale degrees

The formation of the modal scale is based on the triphonic system starting with Ni and ending with Pa'. Consistently the position of the smallest tone is the first within each trichord. The second interval alternates between the large tone and the augmented large tone (fourteen degrees). This explains why in mode 2 Pa is ♭ and Pa' is ♮.

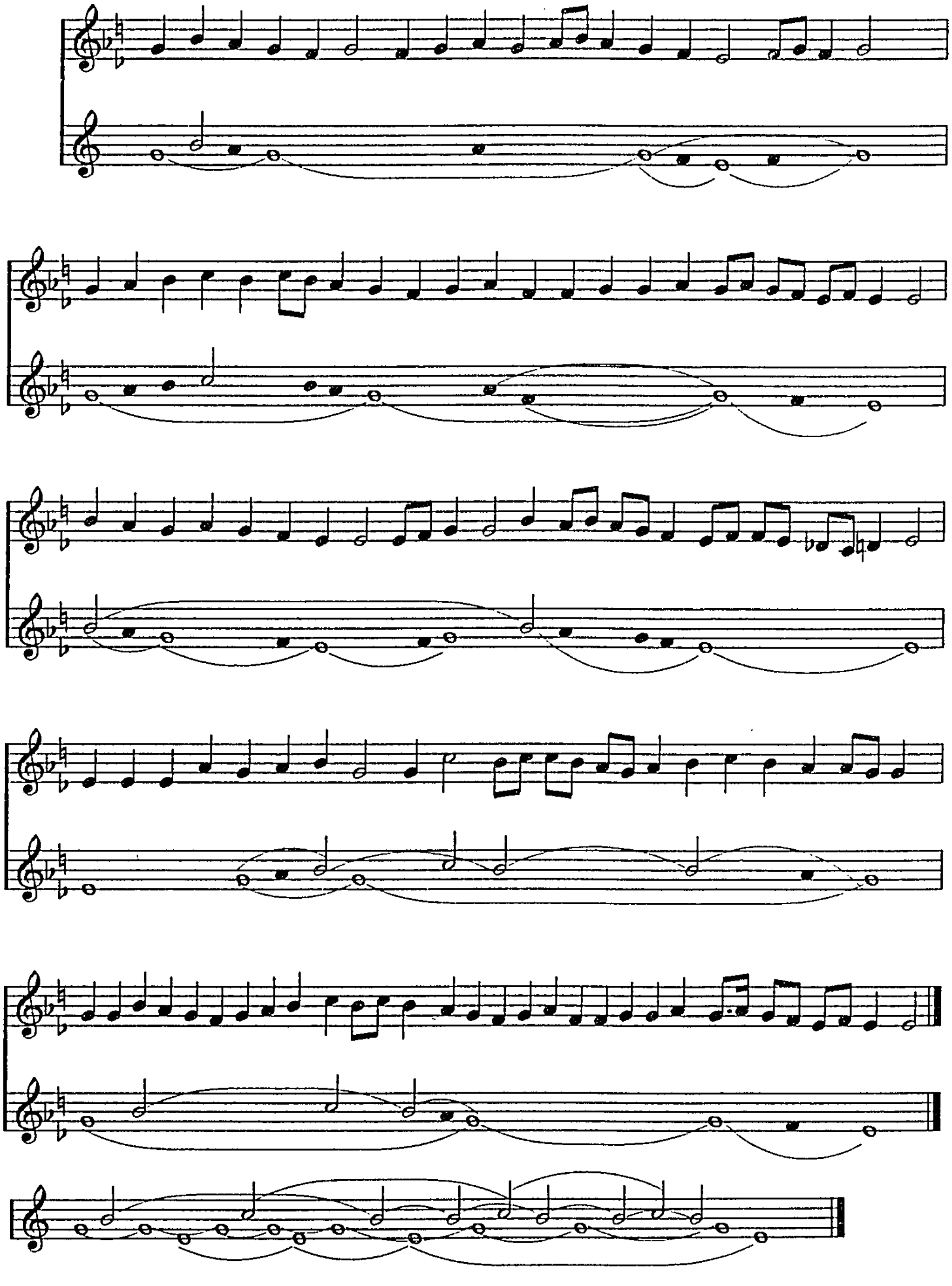


The modal fundamental is Di. The modal dominants are Zo and Ni'. In the chants of mode 2, the two dominants do not have an equally important function. Zo is the principal dominant, representing a more important center of attraction for melodic lines, while Ni' is a secondary dominant representing an occasional alternative center of attraction. A particular feature of mode 2, is that Vu is given a very important function as an alternate fundamental pitch. Melodic formulae explore freely Di and Vu as an area of melodic polarization. Therefore, one could say that rather than having two individual fundamental pitches, mode 2 has a fundamental area consisting of the diatonic trichord in the middle of the modal scale.

Melodic Formulae and Cadences

Perfect and final cadences occur on Di and Vu. Imperfect cadences occur on Zo, Vu, and Ni. As an example of typical melodic formulae of mode 2, the following Sticheraric chant from the beginning of the nineteenth century (Example 4-12) will be analyzed in detail. In the analysis of the chant, both Di and Vu are represented by a whole note, because their melodic relationship functions as the fundamental area. Dominants Zo and Ni are represented by a half note, and the black note heads the pitches with secondary function.

Example 4-12[128]



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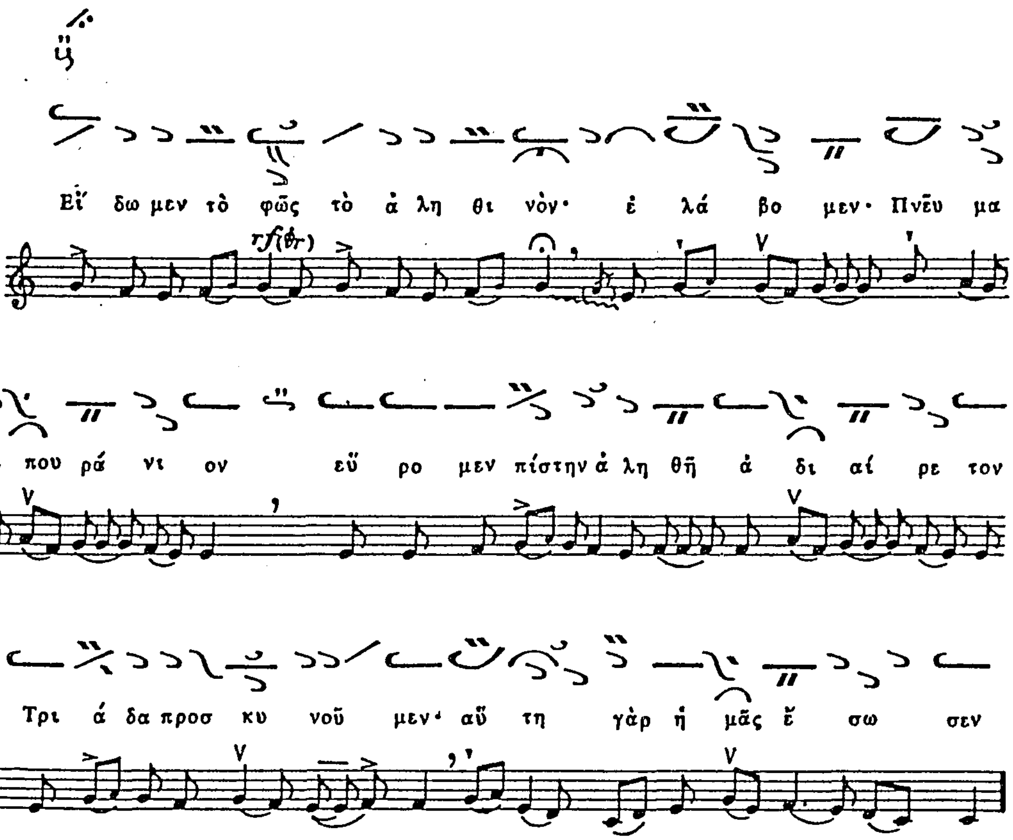
[128] Petru Lampadariu tu Peloponnisiu, *Syntomon Doxarion*, (Bucharest: En to tu Bukorestiu neosizato Typografio, 1820), 5.

Examples of chants in mode 2

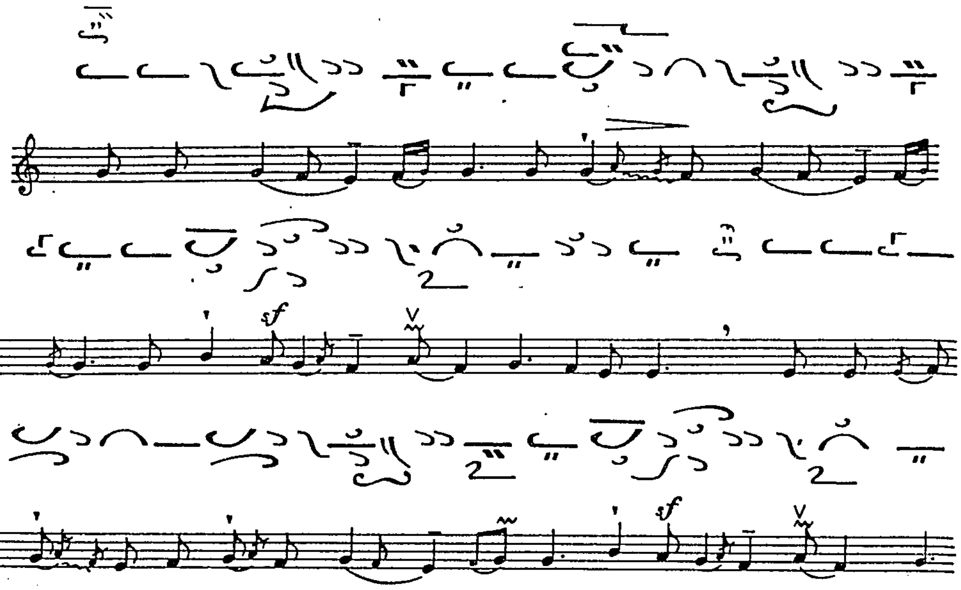
Example 4-13 is a chant from the end of the twelfth century in Hagipolite notation. The manuscript (No. 953, folio 327r) is part of the collection of Byzantine manuscripts in the library of Romanian State Academy. As seen in this chant, during the Paleo-Byzantine period, mode 2 was diatonic. The fundamental is Vu and the dominant Di. This is one of the rare chants where the final cadence is on Ni.

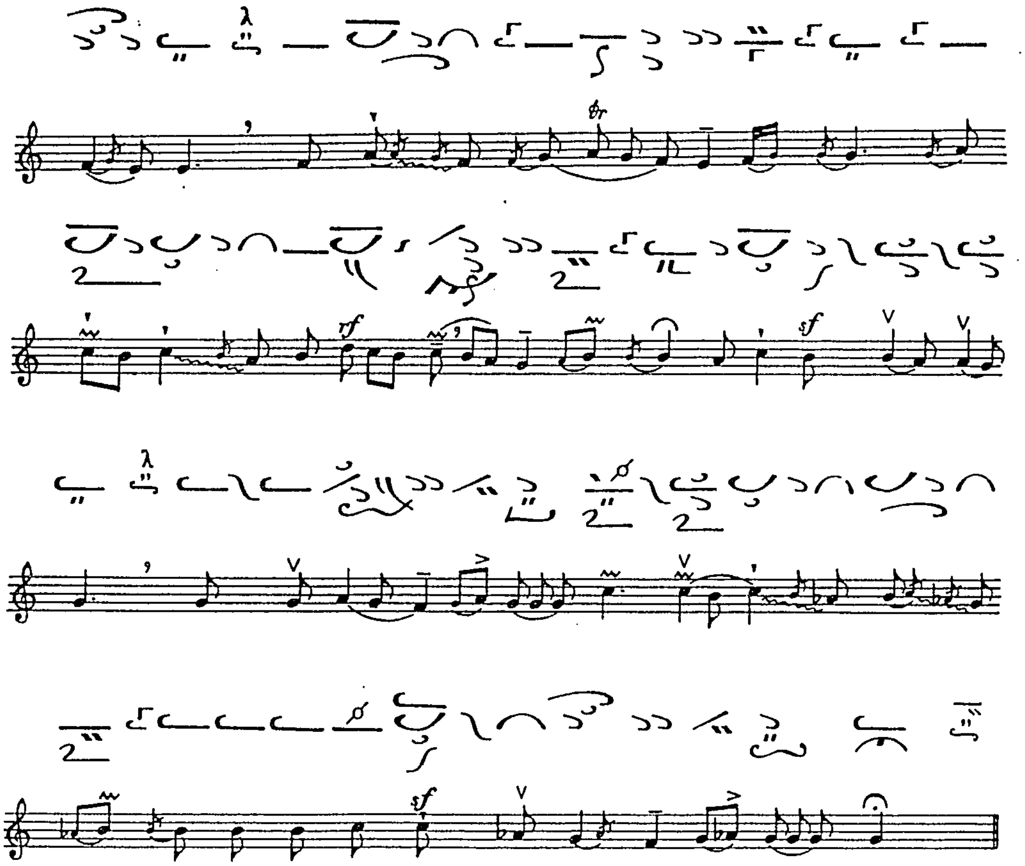
Example 4-13


Εἴ δω μεν τὸ φῶς τὸ ἀ λη θι νόν· ἐ λά βο μεν· Πνεῦ μα
Ἐ που ρά νι ον εὕ ρο μεν πίστην ἀ λη θῆ ἀ δι αί ρε τον
Τρι ά δα προσ κυ νοῦ μεν· αὕ τη γὰρ ἡ μᾶς ἔ σω σεν

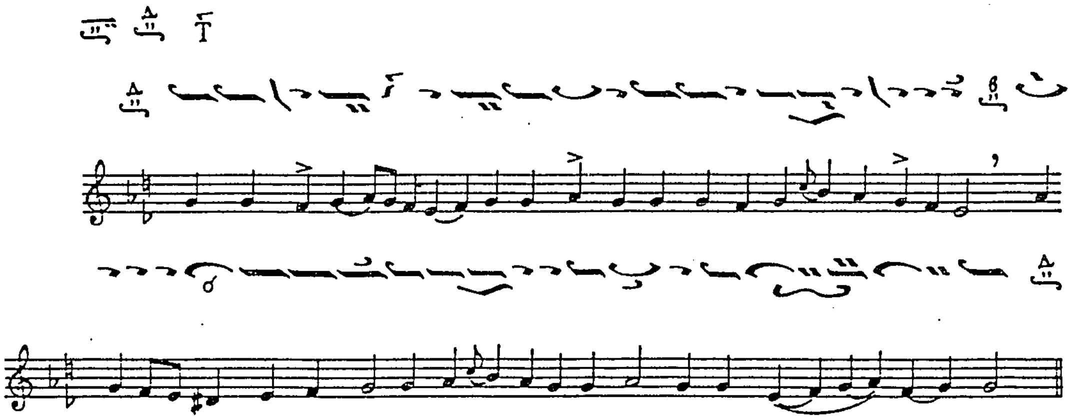
Example 4-14 is chant from the fourteenth century in Koukouzelean notation. Its manuscript (No 61, folio 75) is part of the collection of Byzantine manuscripts in the Library of Romanian State Academy. The melodic genera of this chant is diatonic until the last formula where the chromatic sign indicates that the melody should be executed according to the chromatic scale. The occurrence of the chromatic sign before the final formula is the first documented step in the evolution of mode 2 from diatonic to the chromatic genera. The modal fundamental is Di and Vu, the dominants are Zo and Ni'. The final cadence is on fundamental Di. The abbreviation *tr.* stands for tremolo, a soft and quick repetition of the same note.

Example 4-14





Example 4-15[129] is a Neo-Byzantine Hirmologic chant in chromatic mode 2 with the fundamental on Di and Vu, and the dominant on Zo.



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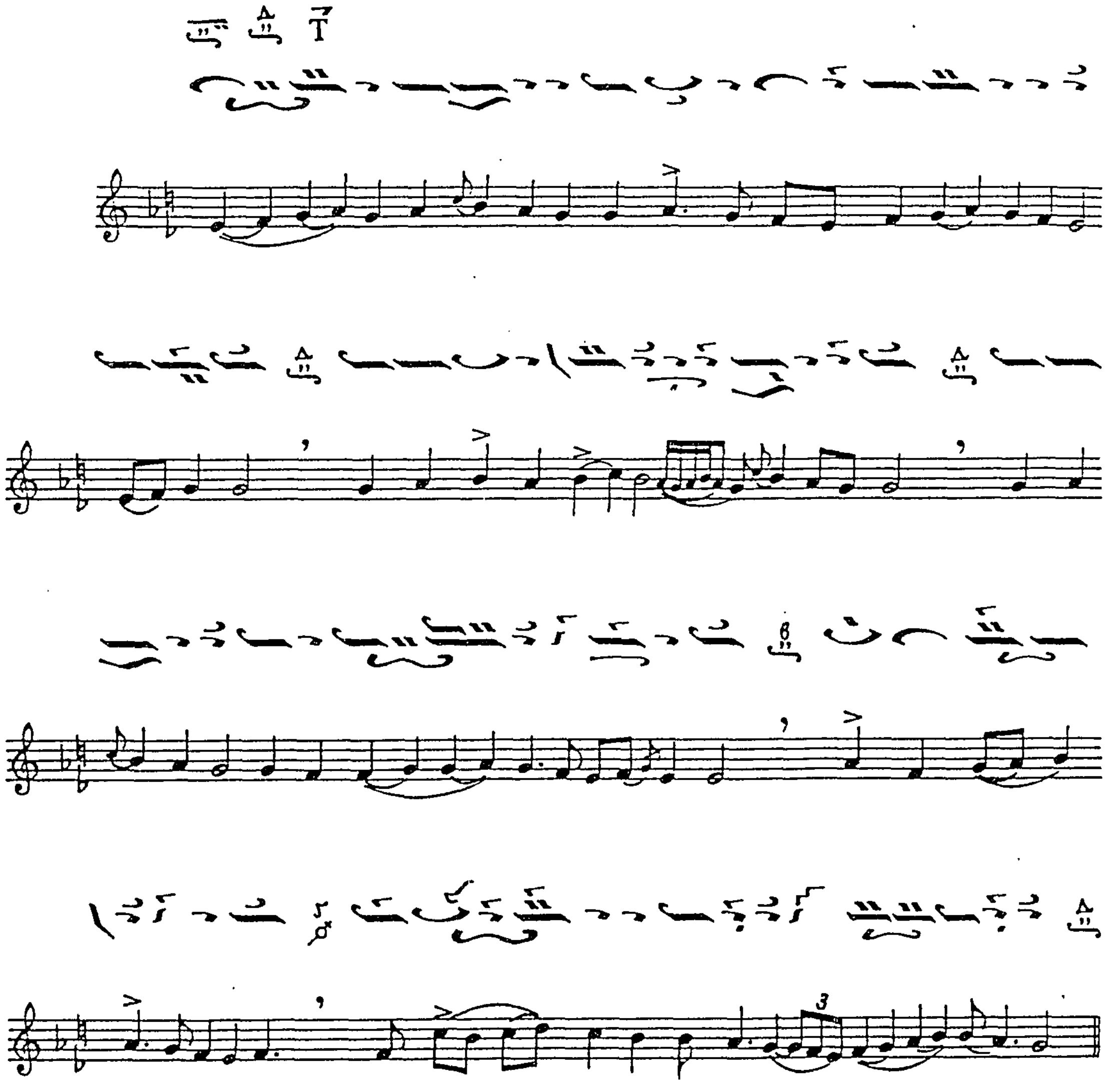
[129] Priest T. V. Stupcanu, *Anastasimatar*, (Bucharest: Tipografia cartilor bisericesti, 1926), 44.

Example 4-16[130] is a Neo-Byzantine Sticheraric chant in chromatic mode 2 with the fundamental on Di and Vu, and the dominant on Zo and Ni.



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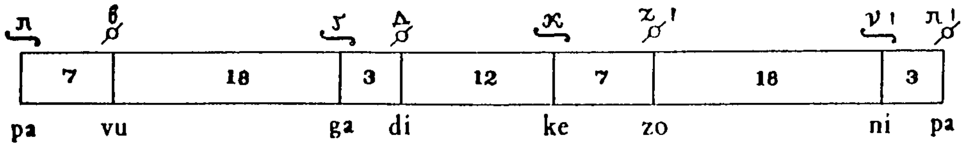
[130] Ibib., 50.

Mode 6 (*Plagios Deuteros*)

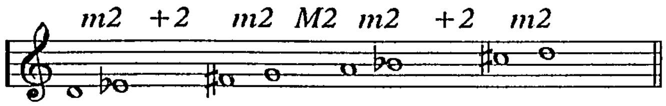
Like authentic mode 2, mode 6 had a similar evolution from diatonic to chromatic genus. Among these two modes, mode 6 is the most representative for chromatic genera because of the presence of the hyperaugmented seconds. These intervals appeared in Byzantine music as an influence from Arabic music.

Modal Scale

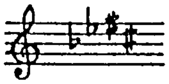
Beside the large tone and small tone, the scale of mode 6 presents an hyperaugmented large tone comprised of 18 Madytos degrees, and its complement, a diminished smallest tone comprised of 3 degrees.

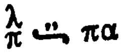


In transcriptions of Byzantine chant in western notation of equal temperament tuning, the modal scale starts on D and has augmented seconds between E♭ and F♯, and B♭ and C♯.

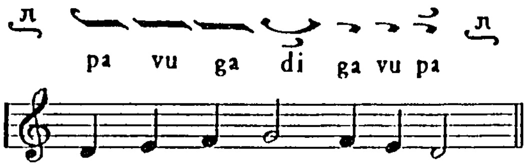


When intonation of microtone is available, a more accurate transcription requires F and C to be raised three quartertones by the ultrasharp. The following Great Martyria represents the modal signature for mode 6. Sometimes it is followed by the Greek letters πα, indicating the fundamental Pa. Transcriptions in western notation use the following key signature.



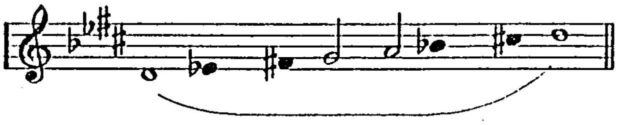


Intonation Formula



Function of Scale Degrees

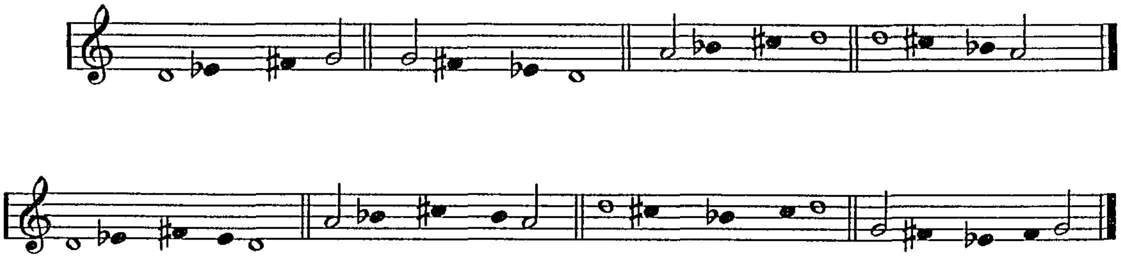
The modal fundamental is Pa. The modal dominants are Di and Ke. In Hirmologic chants the scale formation is based on the diapason system, and uses a reduced ambitus of no more than the diapason (interval of an octave).



In Sticheraric and Papadike chants the ambitus is much larger, reaching the dis-diapason (two octaves) Here the modal scale formation is based on the system of "the wheel" or tetraphonic, consisting or identical pentachords connected through *synaphé.* This explains why Ni below the fundamental is at an interval of twelve Madytos degrees, having the function of subtone.

Melodic Formulae and Cadences

The specific patterns on which the formulae of mode 6 are based can be best represented by the following eight melodic figures:

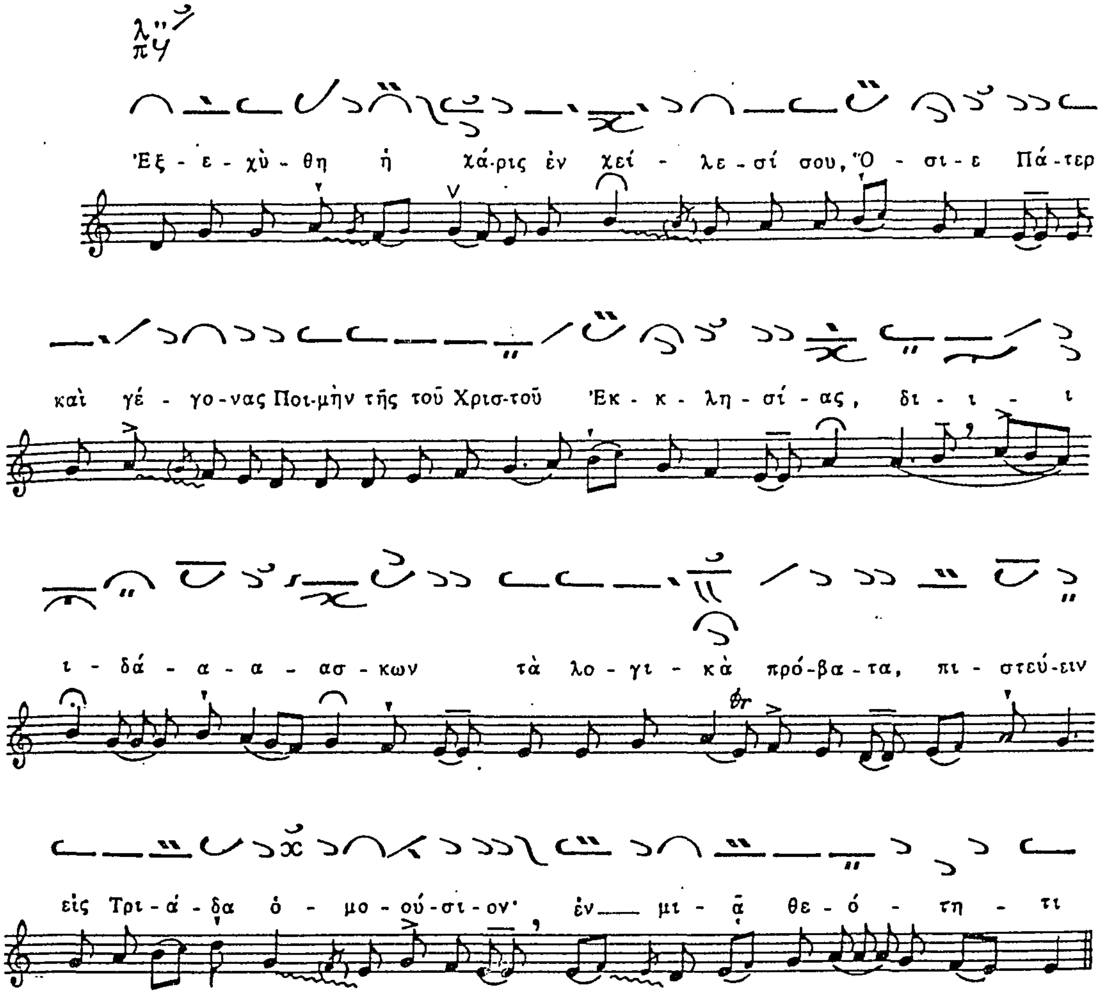


Perfect and final cadences occur on Pa and rarely on Di. Imperfect cadences occur on Di and Ke.

Examples of chants in mode 6

Example 4-17 is a chant from the thirteenth century in Hagipolite notation. The manuscript (No. 953, folio 106v) is found in the library of Romanian State Academy. The modal scale on which this chant is based is diatonic with fundamental on Vu, dominants on Di and Zo, and the reference pitch Ga.

Example 4-17


Ἐξ - ε - χύ - θη ἡ χά-ρις ἐν χεί - λε - σί σου, Ὁ - σι - ε Πά-τερ,
καὶ γέ - γο-νας Ποι-μὴν τῆς τοῦ Χρισ-τοῦ Ἐκ - κ - λη - σί - ας, δι - ι - ι
ι - δά - α - α - ασ - κων τὰ λο - γι - κὰ πρό-βα-τα, πι - στεύ-ειν
εἰς Τρι-ά-δα ὁ - μο - ού-σι-ον· ἐν___ μι - ᾶ θε - ό - τη - τι

Example 4-18[131] is a chant from fourteenth century in Hagipolite notation. The short intonation formula that follows the modal signature contains the sign which indicates a chromatic intonation of the tetrachord E--F--G♯--A. According to performance practice in the Medio-Byzantine period, the augmented fourth interval and its inversion were not acceptable. Therefore, the interval Pa - Di (D-G) in the first line is assumed to be a perfect fourth. Without any special notation sign the intonation of the chant therefore, modulates to the diatonic genera. In the third line the initial intonation is restated twice and the chant reverts back to the chromatic genera. In line four, the perfect fourth interval Pa--Di introduces once more the diatonic intonation. The modal fundamental is Vu. For chromatic passages the dominant is Ke, and for diatonic passages Ke and Di.

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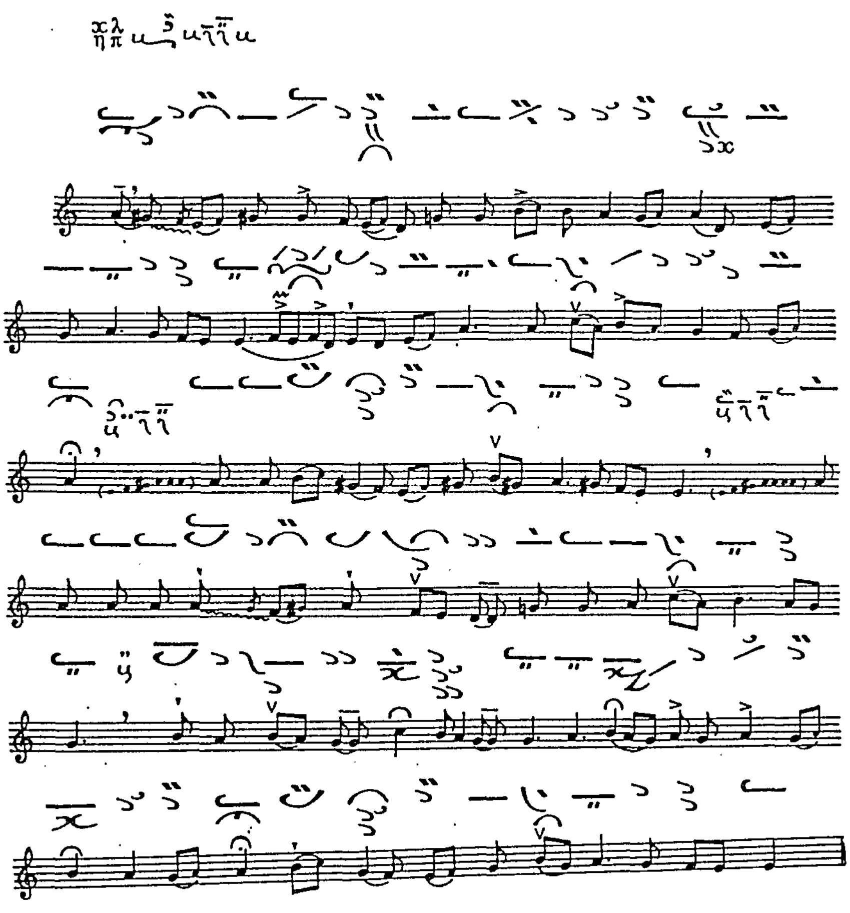
[131] Manuscript No. 39/55r, Library of Central University, Iasi, Romania.

Example 4-18



Example 4-19[132] is a chant from seventeenth century in Koukouzelean notation. Modal fundamental is Vu, dominants Ke and Di. The chromatic tetrachord specific to mode 6, is transposed by the appropriate phtorai to different pitches: B - C - D♯ - E, A - B♭, - C♯ - D, E - F - G♯ - A.

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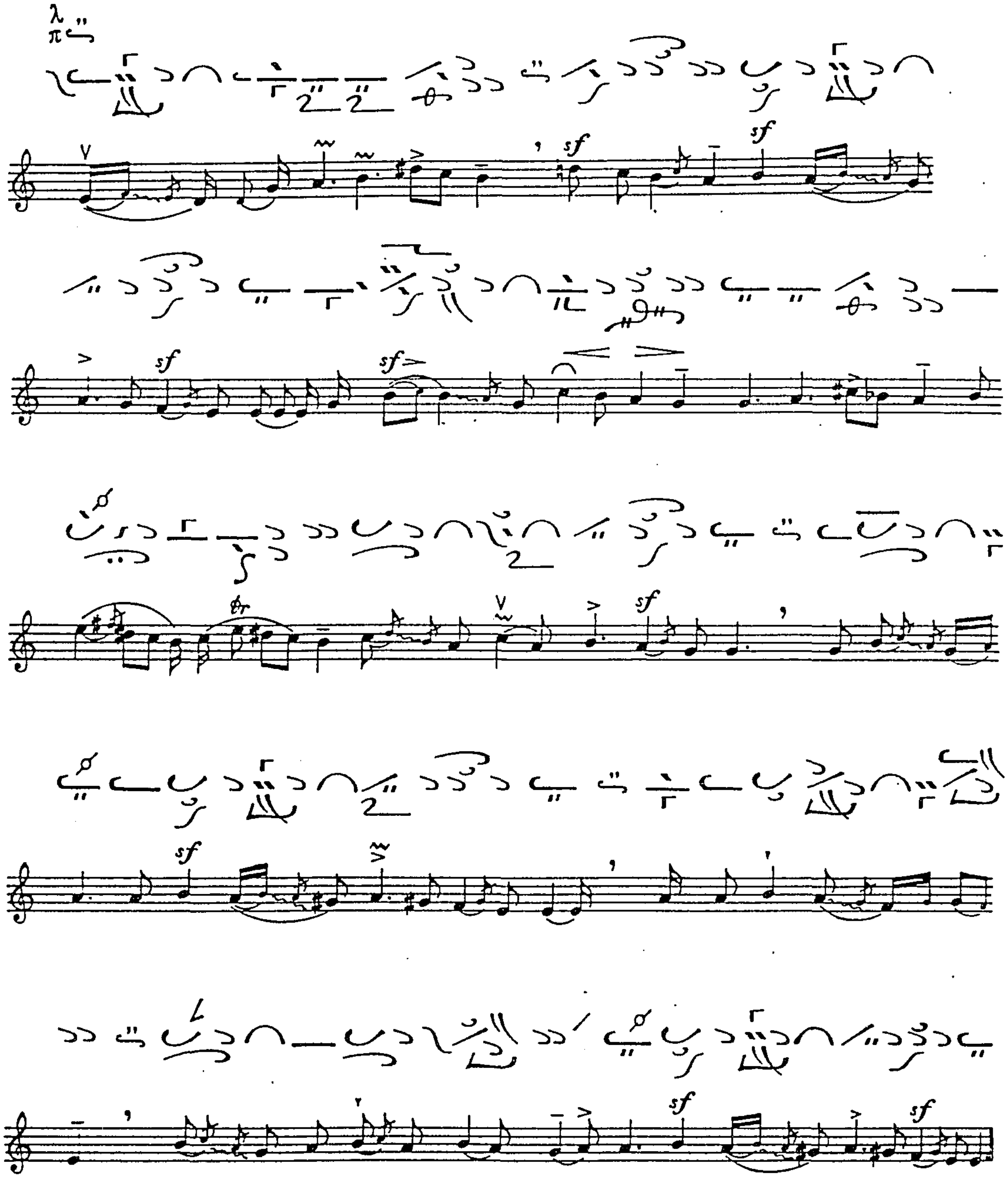
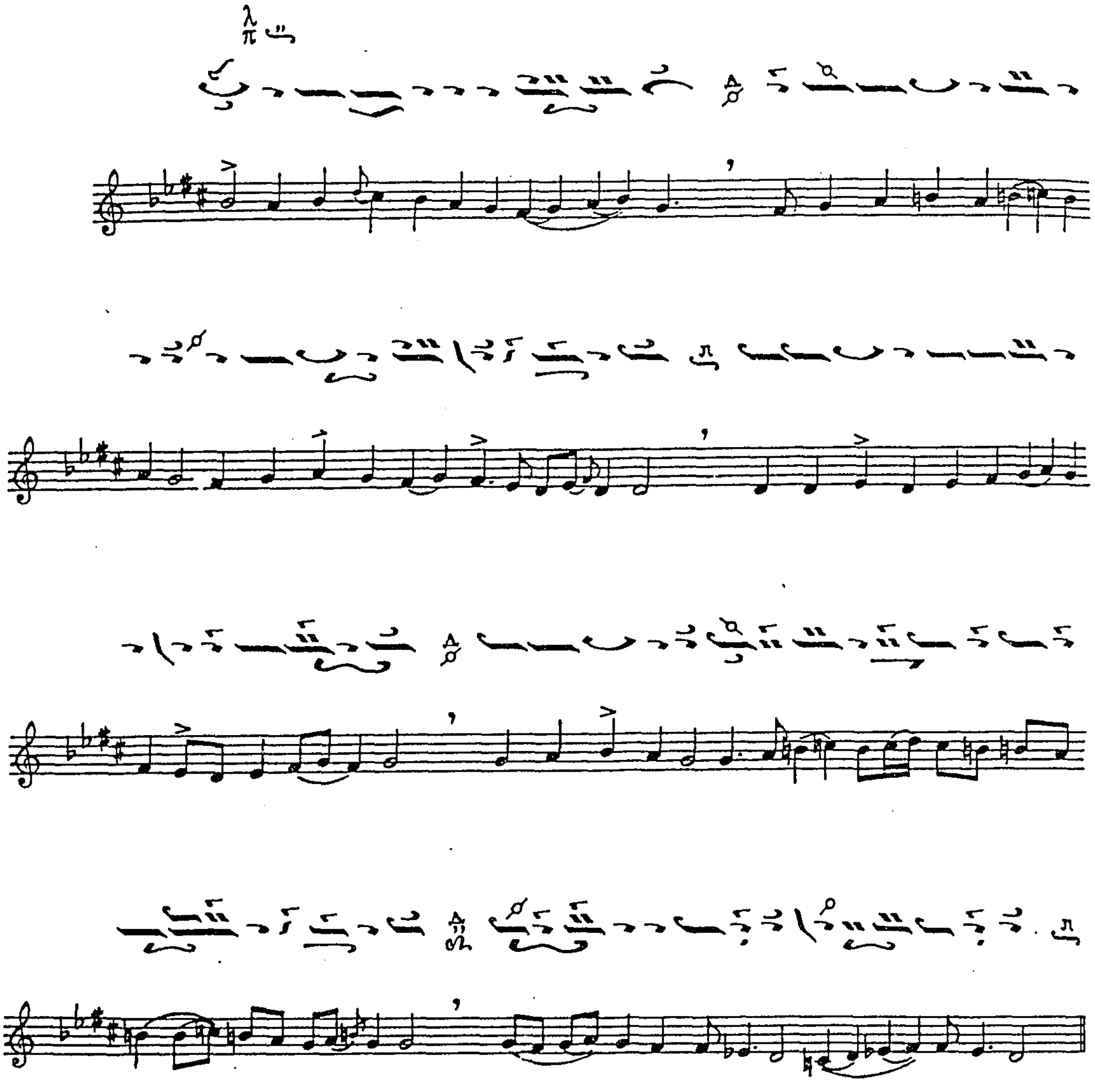
[132] Manuscript 85r from seventeenth century in Anton Toma private colection, Bucharest, Romania.

Example 4-19



Example 4-20[133] is a Neo-Byzantine chant. The fundamental is Pa and the dominant is Di. Diatonic phtora and chromatic phtora modulate the chant back and forth between diatonic and chromatic genera.

Example 4-20



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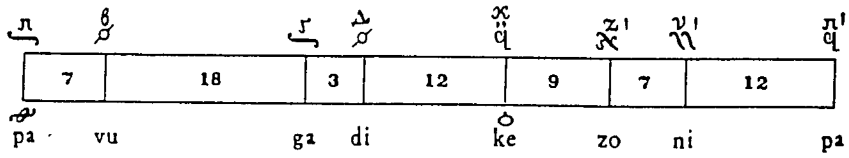
[133] Priest T. V. Stupcanu, *Anastasimatar*, (Bucharest: Tipografia cartilor bisericesti, 1926), 128

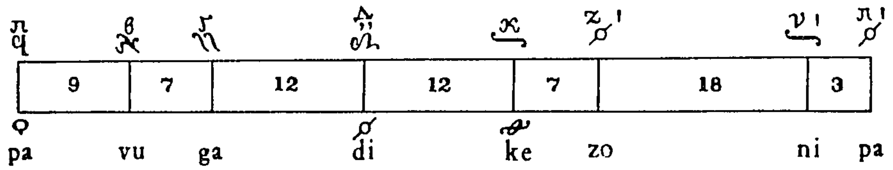
Modal variants

The scale of mode 6 has three variants called mixed scales because they combine diatonic and chromatic tetrachords.

1. A mixed scale with chromatic tetrachord followed by a diatonic tetrachord and connected by *diazeuxis*. To indicate the intervalic structure of this scale, chromatic phtorai are placed above Pa and Di, and a diatonic phtora is placed above Ke.

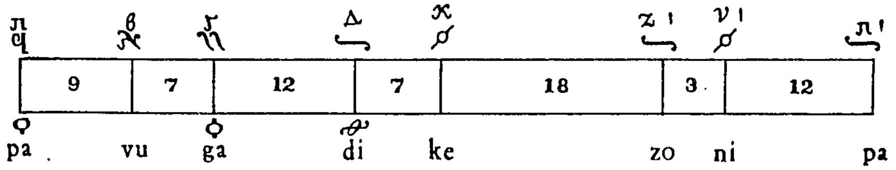


2. A mixed scale with the a diatonic tetrachord followed by a chromatic tetrachord and connected by *diazeuxis*. A diatonic phtora is placed above Pa and a chromatic one is placed above Ke.

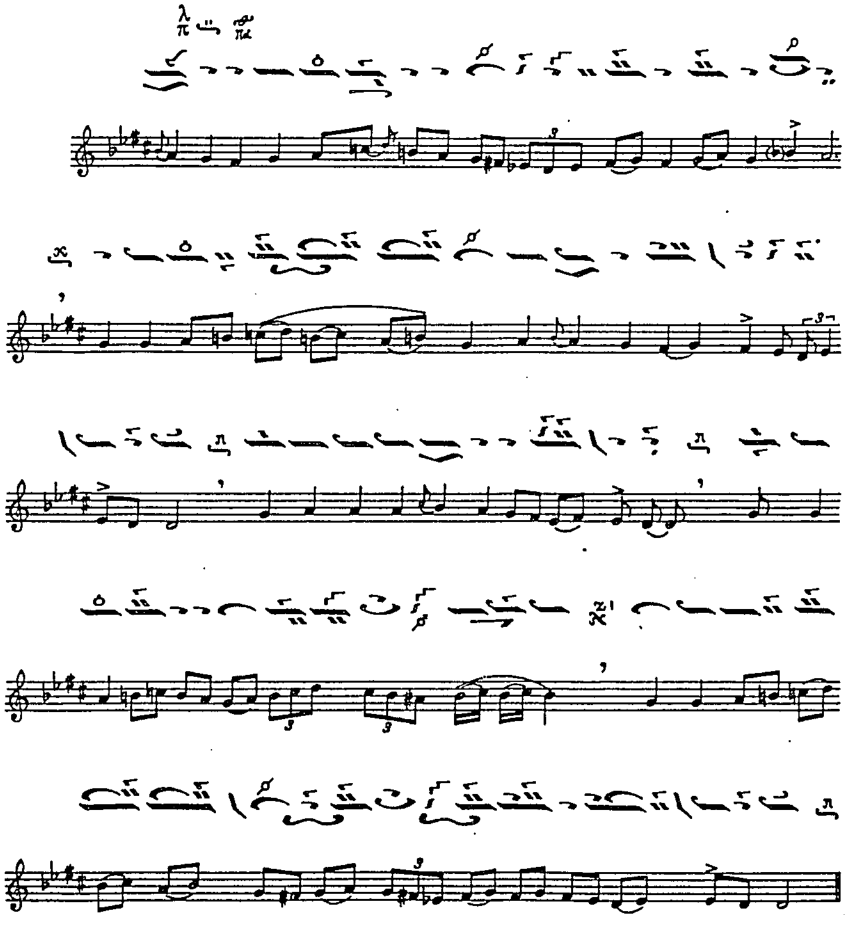


3. A mixed scale with a diatonic tetrachord followed by a chromatic tetrachord and connected by *synaphé*. The diapason is completed in its

upper part by *proslambanomenos*. The diatonic phtora is placed above Pa or Ga, and chromatic phtora is placed above Di.



Example 4-21[134] is a Neo-Byzantine chant. Its structure is based on the first mixed scale of mode 6.



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[134] Agathanghelos Kiriazidis, *E dio melisse musiki eklesiastiki* (Constantinopol, 1906), 518.

Mode 3 (*Tritos*)

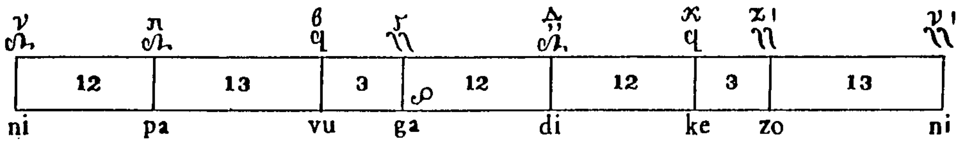
Mode 3 belongs to enharmonic genus of the Byzantine chant. An authentic intonation of enharmonic chants requires the best skills from a well-trained Byzantine singer. Because of unfavorable influences, an authentic execution of enharmonic chants has almost ceased to exist. With rare exceptions, the chants of enharmonic genera are performed today according to the diatonic scale. The influences contributing to this unfortunate phenomenon are 1) social, 2) political, and 3) cultural.

1. The social influence is related to the considerable decrease of involvement and authority of the Byzantine church over the social life of the culture. This process has taken place gradually over the last half a century.
2. The political influence is related to the former communist leadership of East European countries, which attempted by means of persecution to destroy all aspects of religious life, including also sacred music of all origins.
3. The cultural influence is related to the expansion of the western culture which threatens to replace and/or alter the local cultural traditions. With

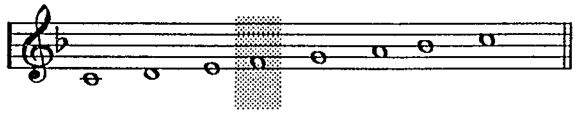
regard to enharmonic genera of Byzantine chant, the strongest and most detrimental influence was that of the equal temperament of western music.

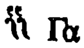
Modal Scale

The scale of enharmonic mode 6 uses the diminished smallest tone (microtone) and two sizes of large tone: that of twelve degrees and of thirteen degrees.

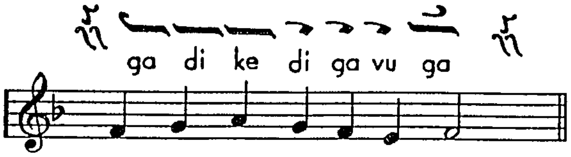


In transcriptions of Byzantine chants in western notation of equal temperament and in today's performance practice (as explained above) the scale of mode 3 is similar to the F major tonal scale with an ambitus between C and C'.



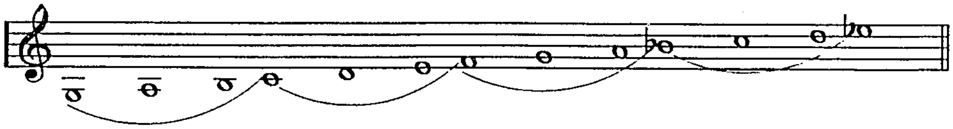
The following Great Martyria represents the signature of mode 3. 

Intonation Formula

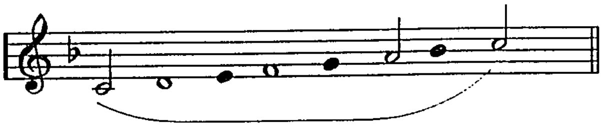


Function of Scale Degrees

Mode 3 has two pitches that can function as modal fundamental. Ga is the principal fundamental and Pa is the secondary fundamental. The principal dominant is Ke and a secondary dominant is Ni. In actual performances the chants in mode 3 have a special character for the listener accustomed with western tonal music, that is of the combined presentation of the major tonality and its minor relative. The scale formation of mode 3 in the Medio-Byzantine period was based on the triphonic system.

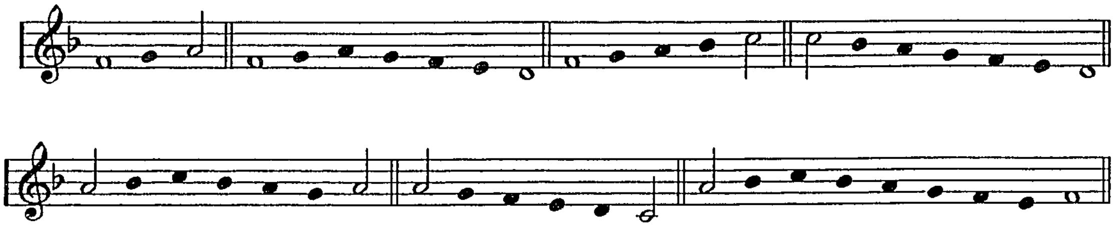


In the Neo-Byzantine chant the modal scale is formed and functions according to the diapason system.



Melodic Formulae and Cadences

Melodic formulae of mode 3 emphasize the double fundamental and double dominant character. The following melodic patterns are the base for the most usual formulae in mode 3.



Final and perfect cadences occur on the fundamentals Ga and Pa. Imperfect cadences may occur on dominants Ke and Ni. In Sticheraric and Papadike chants occasional imperfect cadences may also occur on Di.

Musical examples

Examples 4-22 and 4-23 are chants from the end of the thirteenth century, found in manuscripts of Hagipolite notation[135]. Modal fundamentals are Ga and Pa. Imperfect cadences occur on Zo♮ and Di. Final cadences for both chants are on Zo♮.

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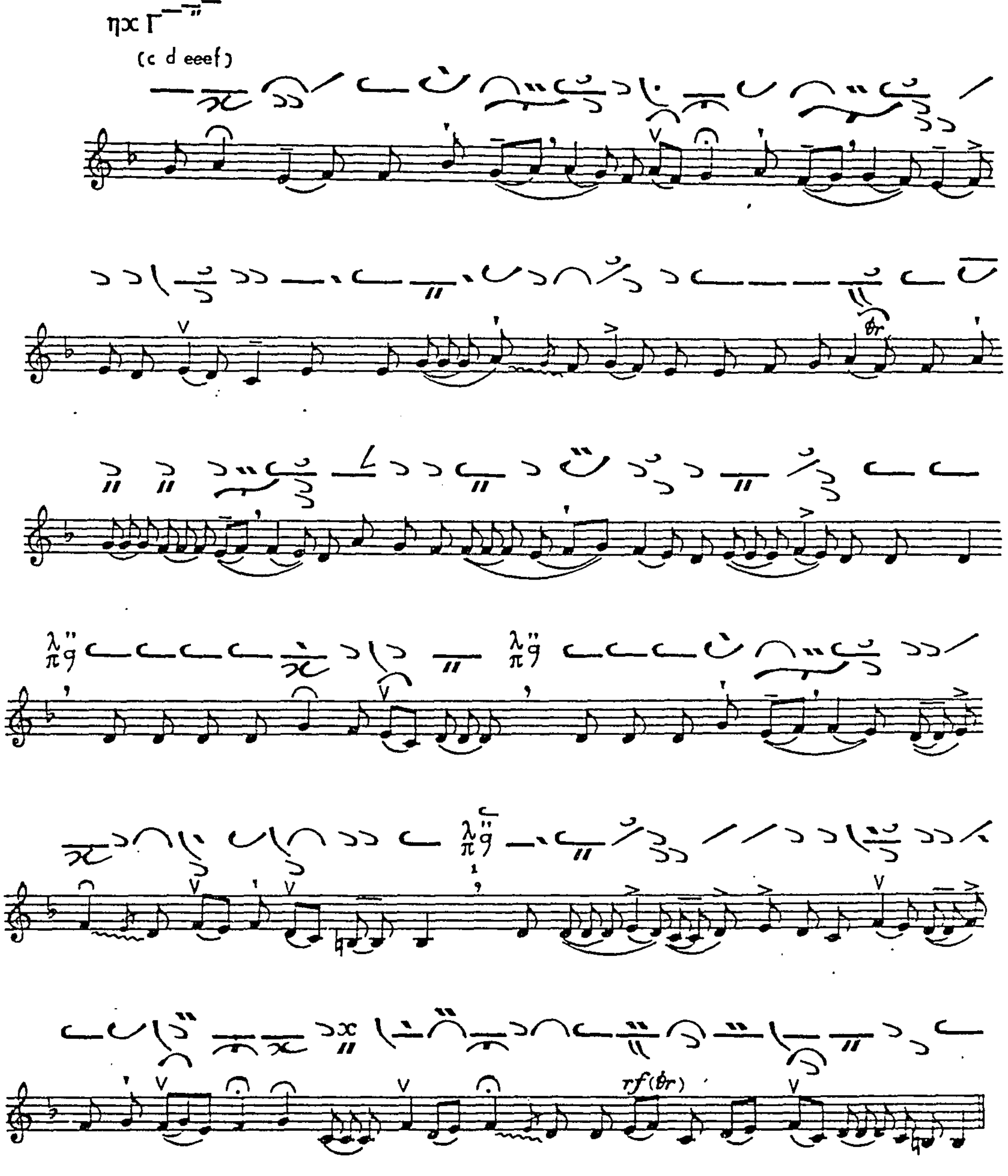
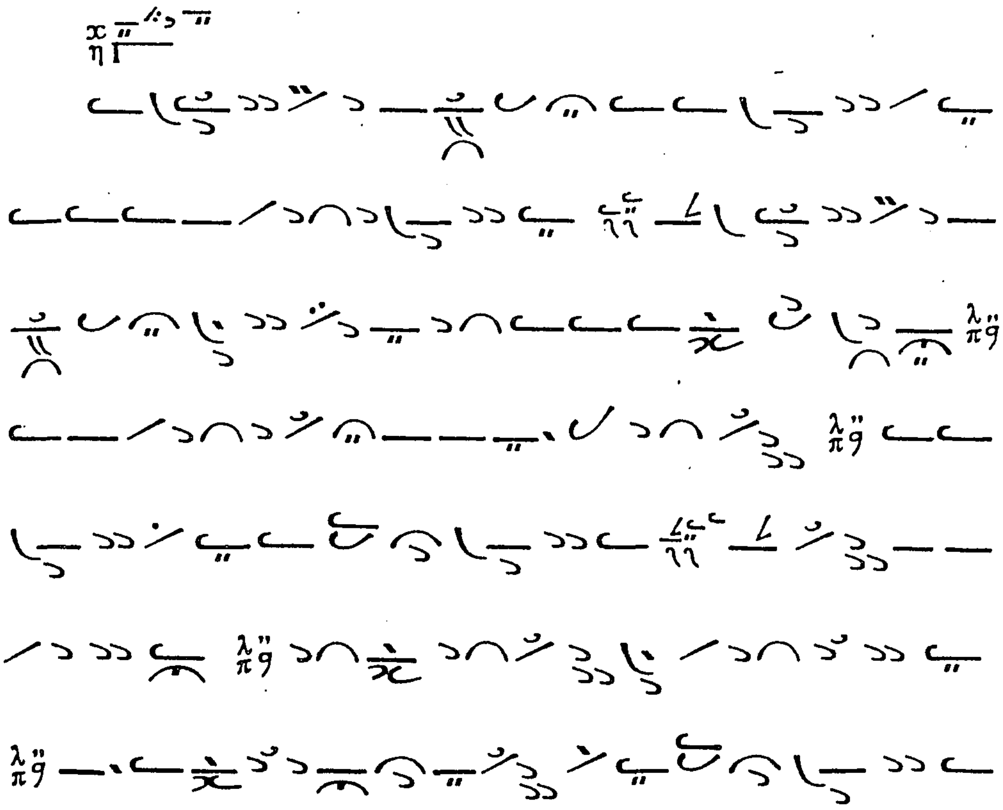
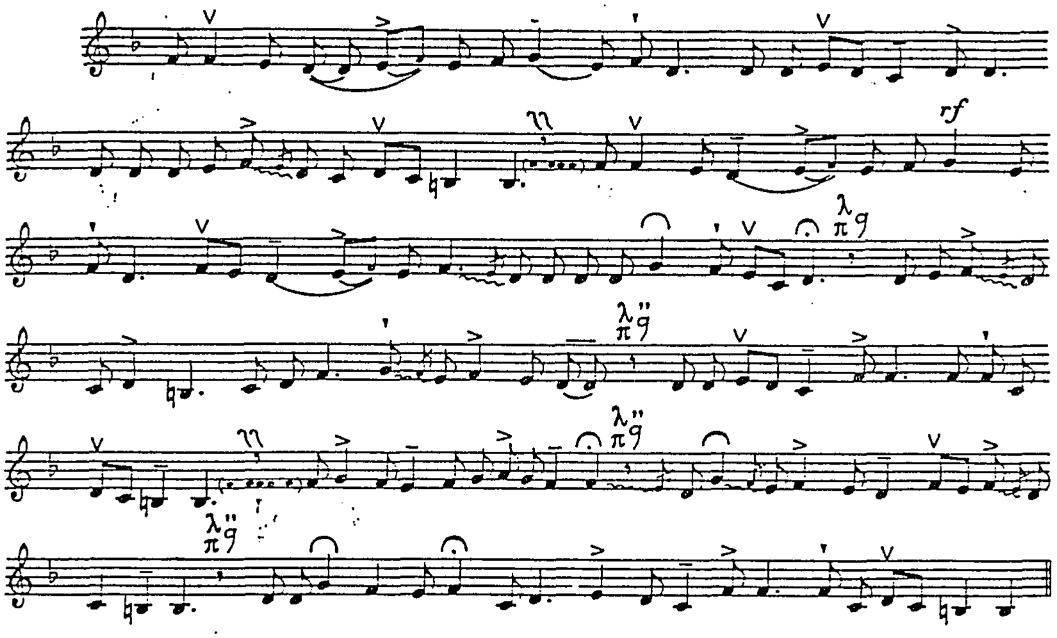
[135] Manuscript No. 953/224r, Library of Romanian State Academy, Bucharest, Romania: Manuscript No. 39/86r, University Central Library, Iasi, Romania.

Example 4-22



Example 4-23





Example 4-24[136] is a chant from the seventeenth century. The modal fundamentals are Ga and Pa. The modal dominant is Ke. Perfect cadences occur on Ga and Pa, final cadence is on Pa and imperfect cadences occur on Zo♮.

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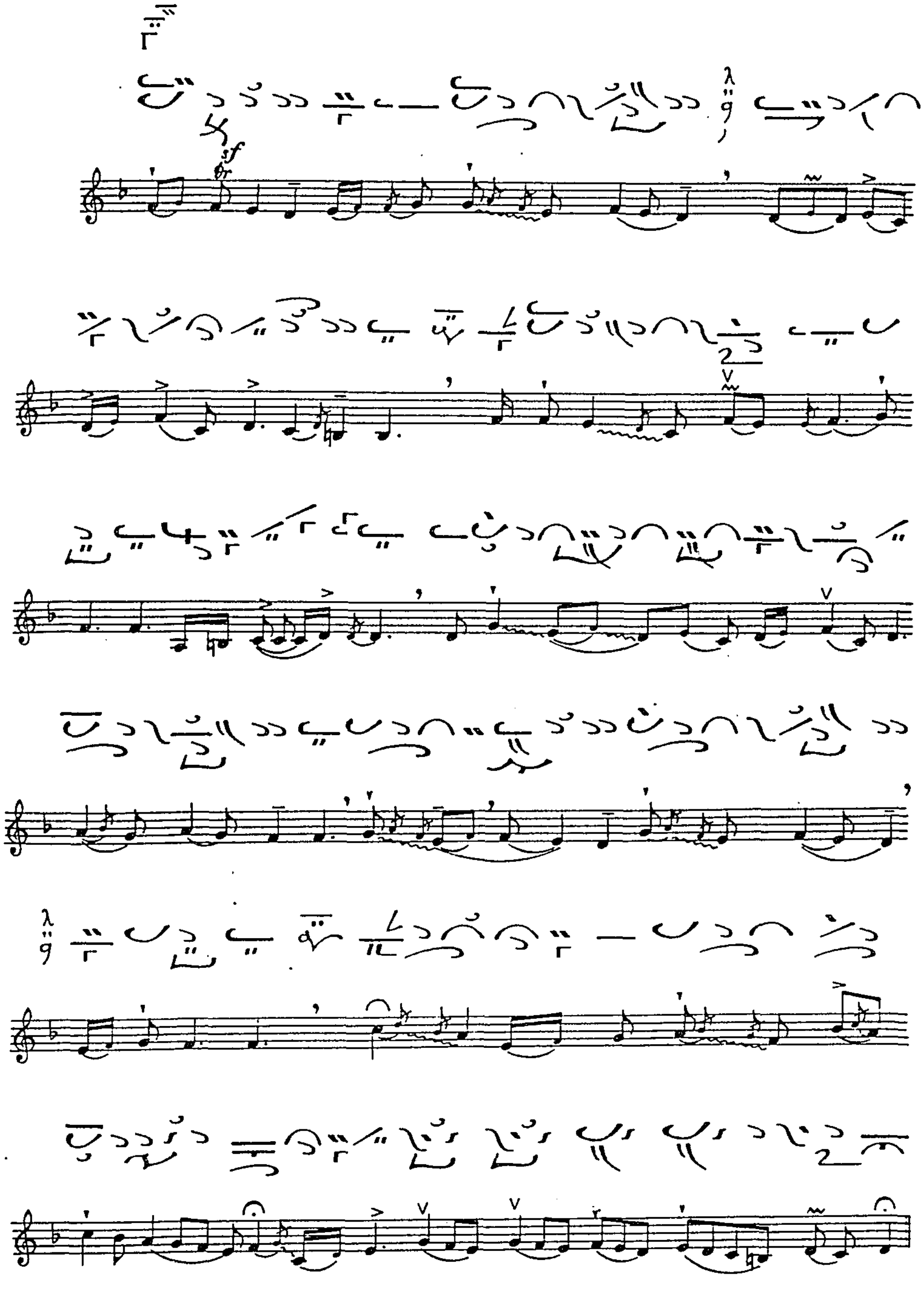
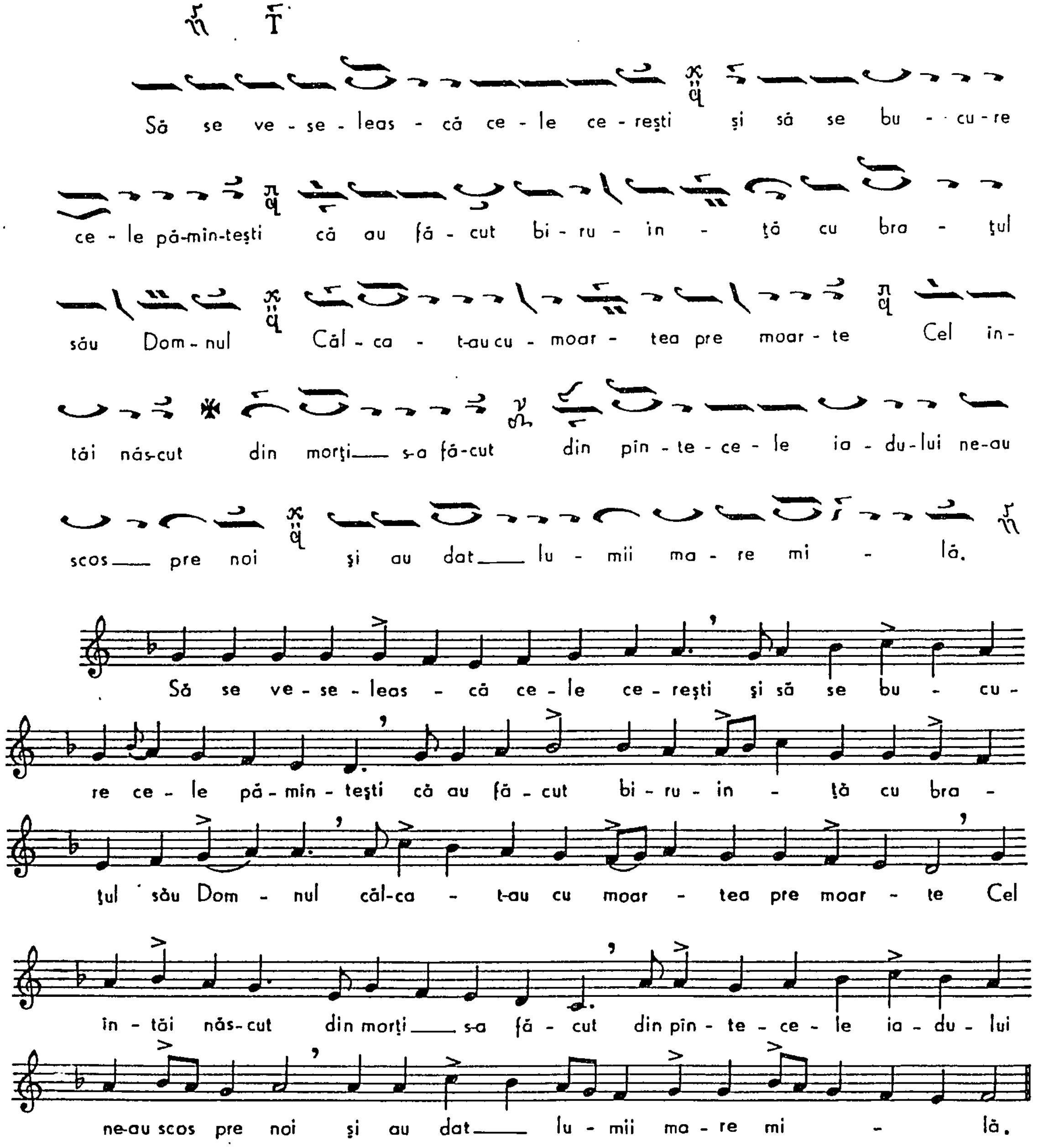
[136] Manuscript No.165v, Anton Toma private colcection of Byzantine manuscripts, Bucharest, Romania.

Example 4-24



Examples 4-25[137] is Neo-Byzantine chants. The modal fundamentals are Ga and Pa, dominants are Ke and Ni, and the final cadence occurs on Pa.

Example 4-25


Să se ve - se - leas - că ce - le ce - reşti şi să se bu - - cu - re
ce - le pă-min-teşti că au fă - cut bi - ru - in - ţă cu bra - ţul
său Dom - nul Căl - ca - t-au cu - moar - tea pre moar - te Cel în -
tâi năs-cut din morţi — s-a fă-cut din pîn - te - ce - le ia - du-lui ne-au
scos — pre noi şi au dat — lu - mii ma - re mi - lă.
Să se ve - se - leas - că ce - le ce - reşti şi să se bu - cu -
re ce - le pă - min - teşti că au fă - cut bi - ru - in - ţă cu bra -
ţul său Dom - nul căl-ca - t-au cu moar - tea pre moar - te Cel
în - tâi năs- cut din morţi — s-a fă - cut din pîn - te - ce - le ia - du - lui
ne-au scos pre noi şi au dat — lu - mii ma - re mi - lă.

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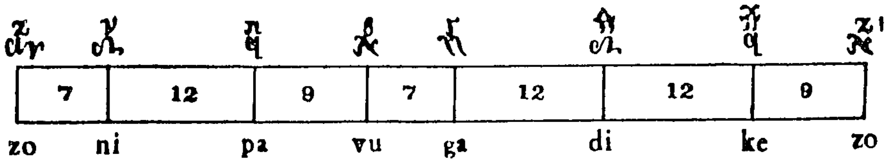
[137] Prist T. V. Stupcanu, *Anastasimatar*, (Bucharest: Tipografia cartilor bisericesti, 1926), 63.

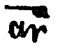
Mode 7 (*Plagios Tritos*)

Also called mode *varis*,[138] Mode 7 is, perhaps, the most complex mode from the point of view of melodic diversity. There are four modal variants-- one diatonic, one chromatic, and two enharmonic.

Modal Scales, Intonation Formulae, and Function of Scale Degrees

The diatonic scale is used predominately in Papadike chants. It has an intervalic structure identical with that of mode 1.



The following Great Martyria Neume followed by fundamental Zo represents the modal signature of diatonic mode 7.  Zo

The following melodic passage constitutes the intonation formula.

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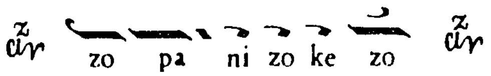
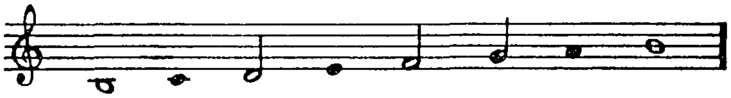
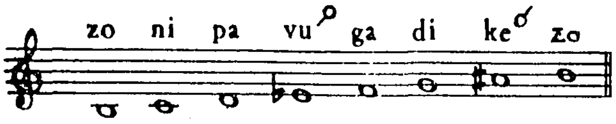
[138] In Greek = Grave (low pitched voice). Its name reflect the fact that this is the mode with the lowest pitched fundamental (Zo) among all eight modes.



Diatonic mode 7 has its fundamental on Zo. Perfect cadences occur on Zo and Pa. Final cadence occurs on Zo. Imperfect cadences occur on Ga, Di and Zo'. Three pitches may have the function of dominant: Pa, Ga, and Di.



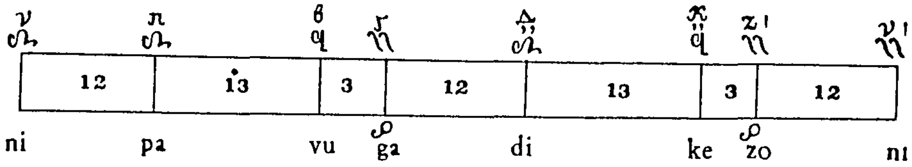
The chromatic scale is not an independent scale but derives from the diatonic scale mentioned above, being obtained through the chromatic alteration of two pitches: Vu is lowered and Ke is raised.



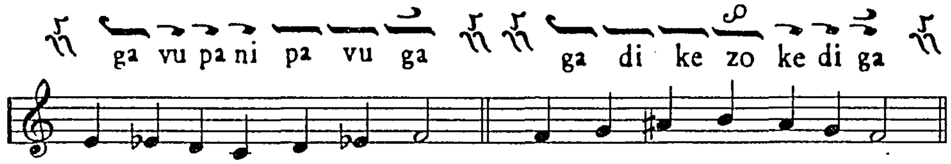
This scale does not have an individual intonation formula, or an individual modal signature, using those of the diatonic variant. Therefore, in chants using this scale, Vu and Ke must receive the chromatic sign throughout the chant. This variant of mode 7 is used predominantly in Sticheraric chants.

Cadences and melodic formulae are identical with those of the diatonic variant.

The first enharmonic scale, used predominantly in Sticheraric and Hirmologic chants, is identical with the scale of enharmonic mode 3.



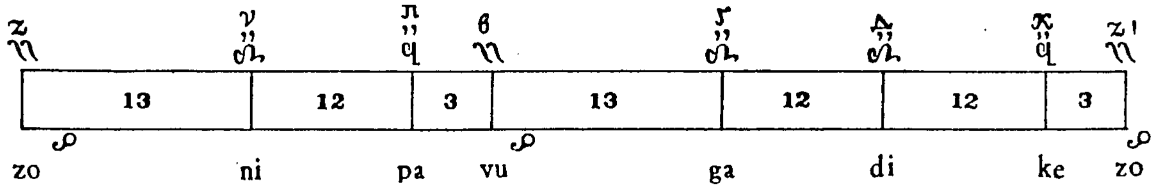
However, differences between enharmonic mode 3 and enharmonic mode 7 are significant in the area of functionality of pitches, formulae, and cadences. In mode enharmonic 7 (variant 1) the modal fundamental is Ga while in mode 3 fundamentals are Ga and Pa. In mode 7 (enharmonic variant 1) dominants are Pa and Di, while in mod 3 dominants are Ke and Ni. There are two intonation formulae for enharmonic mode 7 (variant 1).



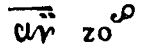
The performer's choice of one formula over the other is related to which part of the modal scale is first explored by the melody of the chant. For instance, if the melody of the chant first raises above the fundamental Ga, like in Example 4-30, then the second formula will be used.

The Great Martyria Neume representing the enharmonic mode 7 (variant 1) is the same as the one representing the diatonic mode 7 but followed by fundamental Ga. The modal signature used in transcriptions of Byzantine chant in western notation of equal temperament tuning is that of F major tonality.

The second enharmonic scale of mode 7 has its fundamental on Zo. The dominant is Di. Perfect and final cadences occur on Zo, and imperfect cadences may occur on Ni, Pa and Di.



The contour of the melodic intonation is identical with that of diatonic mode 7, but of course, following the correct intonation of the enharmonic scale.

The modal signature uses the same Great Martyria the diatonic variant but followed by fundamental Zo with the enharmonic phtora. 

In transcriptions of Byzantine chant in western notation of equal temperament tuning, the modal signature is identical with that of Bb major tonality.

Melodic Formulae

There are a great number of melodic formulae which can occur in different variants of mode 7. However, they all follow the same principle already mentioned in connection with the previous modes, that of establishing relations between pitches with principal function. By identifying the key signature and the functional pitches at the beginning and the end of the formulae of any given chant, one should be able to correctly identify the mode.

Musical Examples

Example 4-26[139] is a Sticheraric chant in diatonic mode 7. The original manuscript is in Hagipolite notation. The modal fundamental is Ga and the dominants are Di and Ke.

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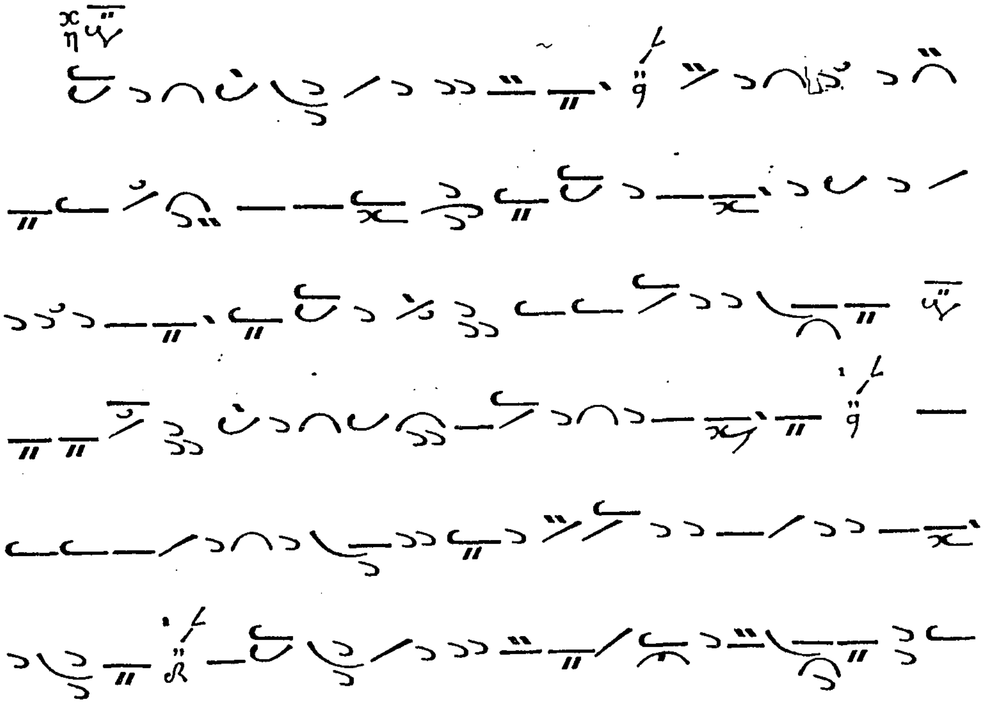
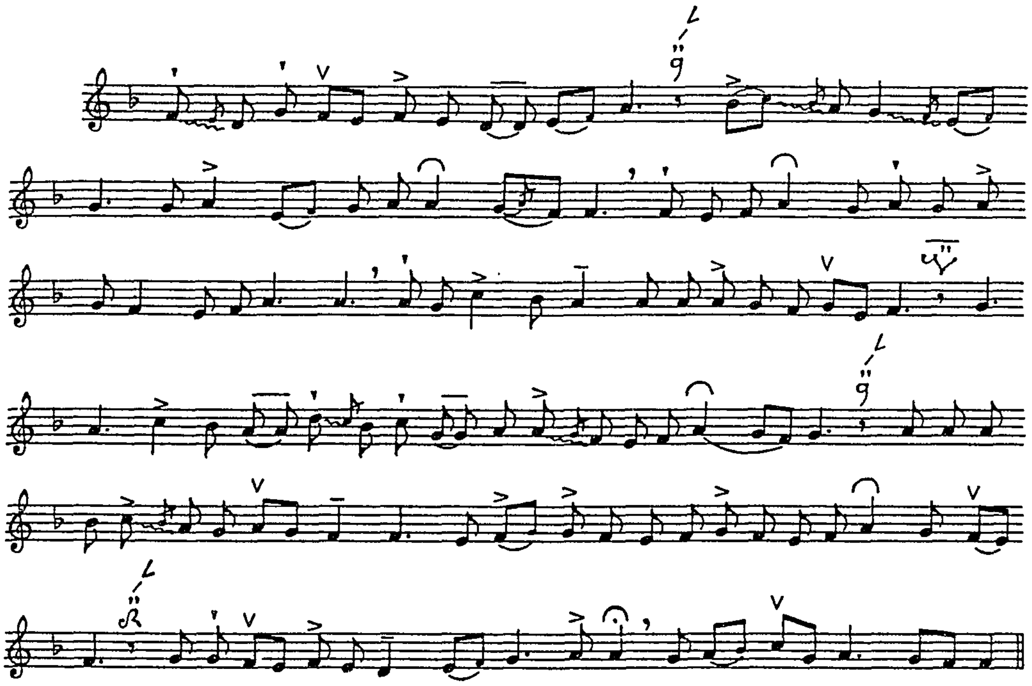
[139] Manuscript No. IV 39/127v. from thirteenth century. University Central Library. Iasi. Romania.

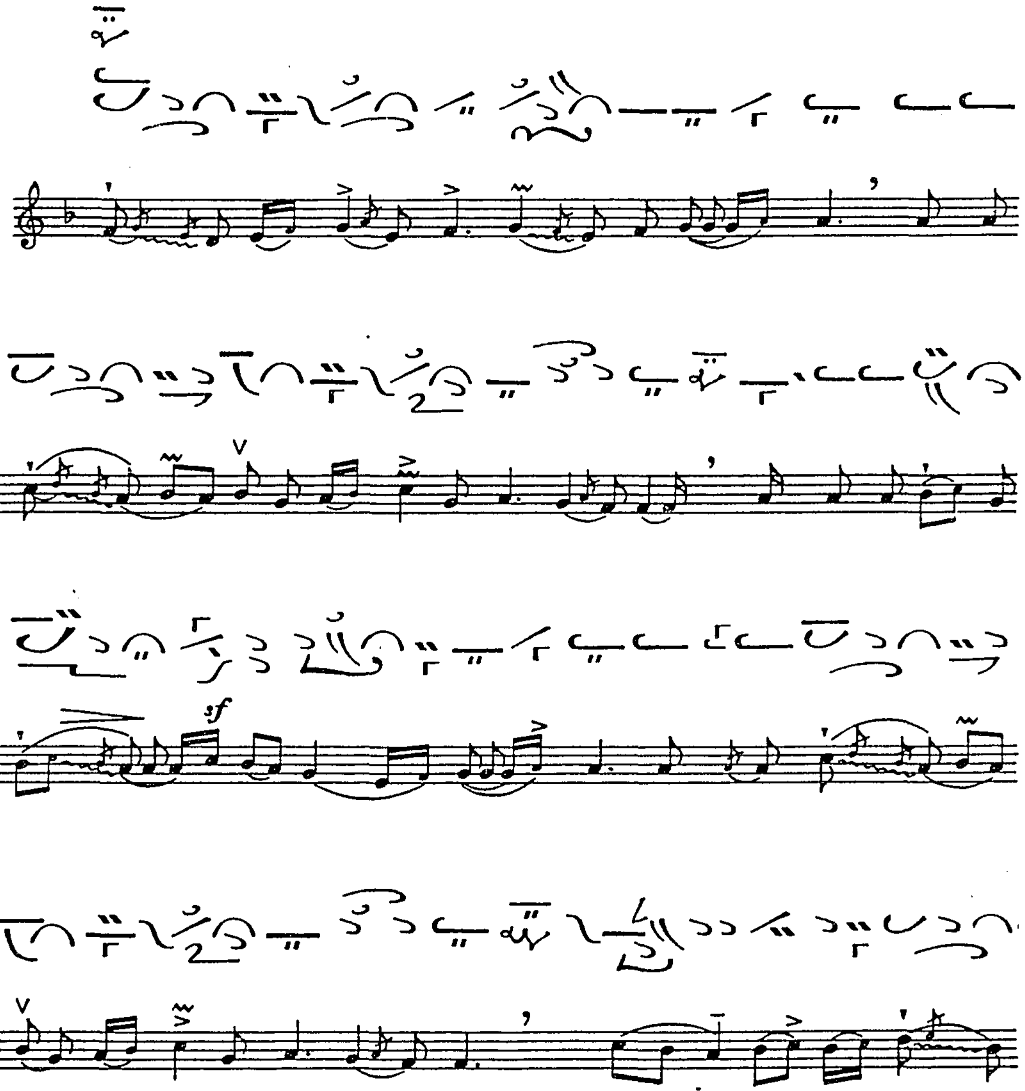
Example 4-26





Example 4-27[140] is a Sticheraric chant from the seventeenth century in Koukouzelean notation. The fundamental is Ga and the dominant is Ke.

Example 4-27



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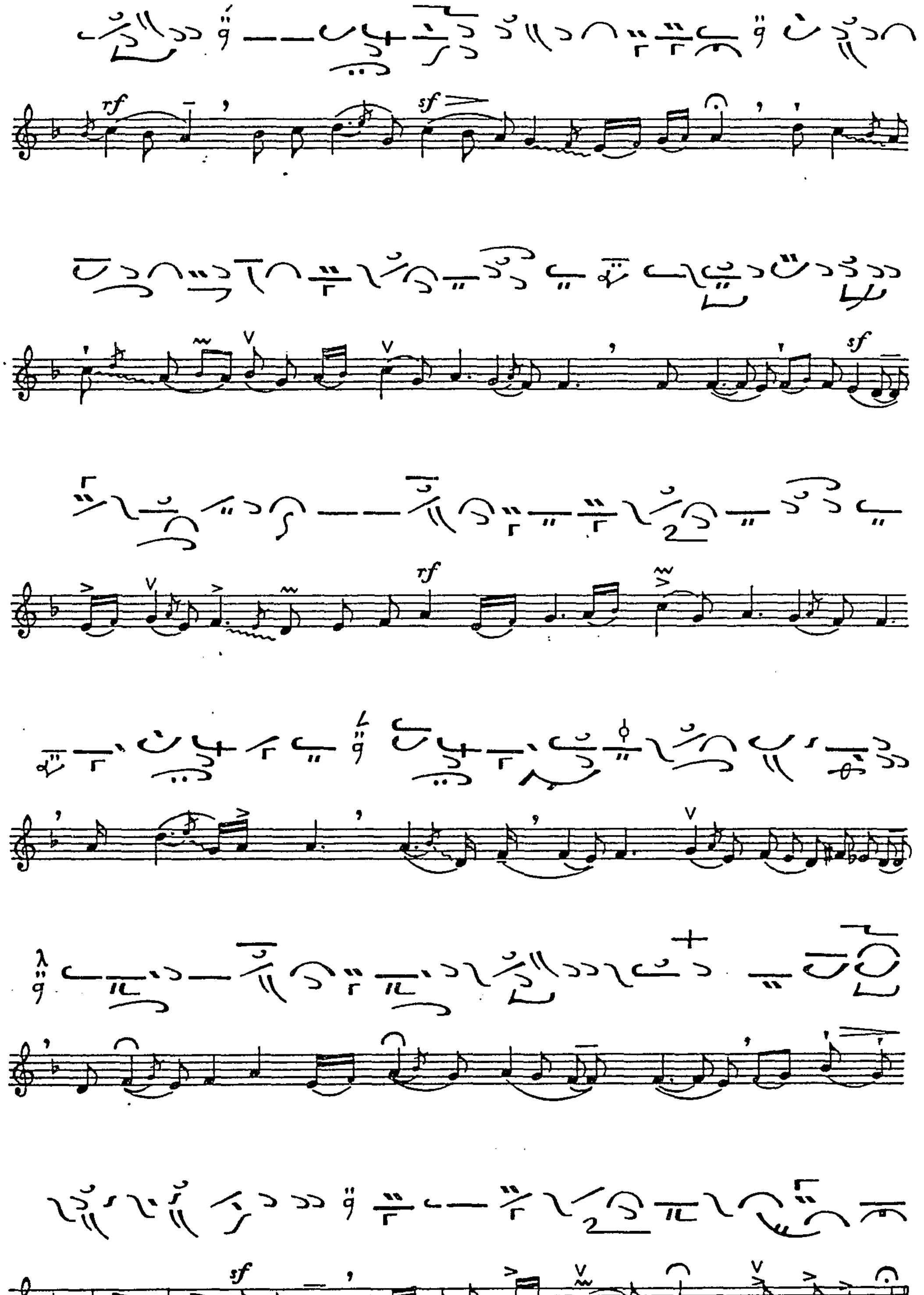
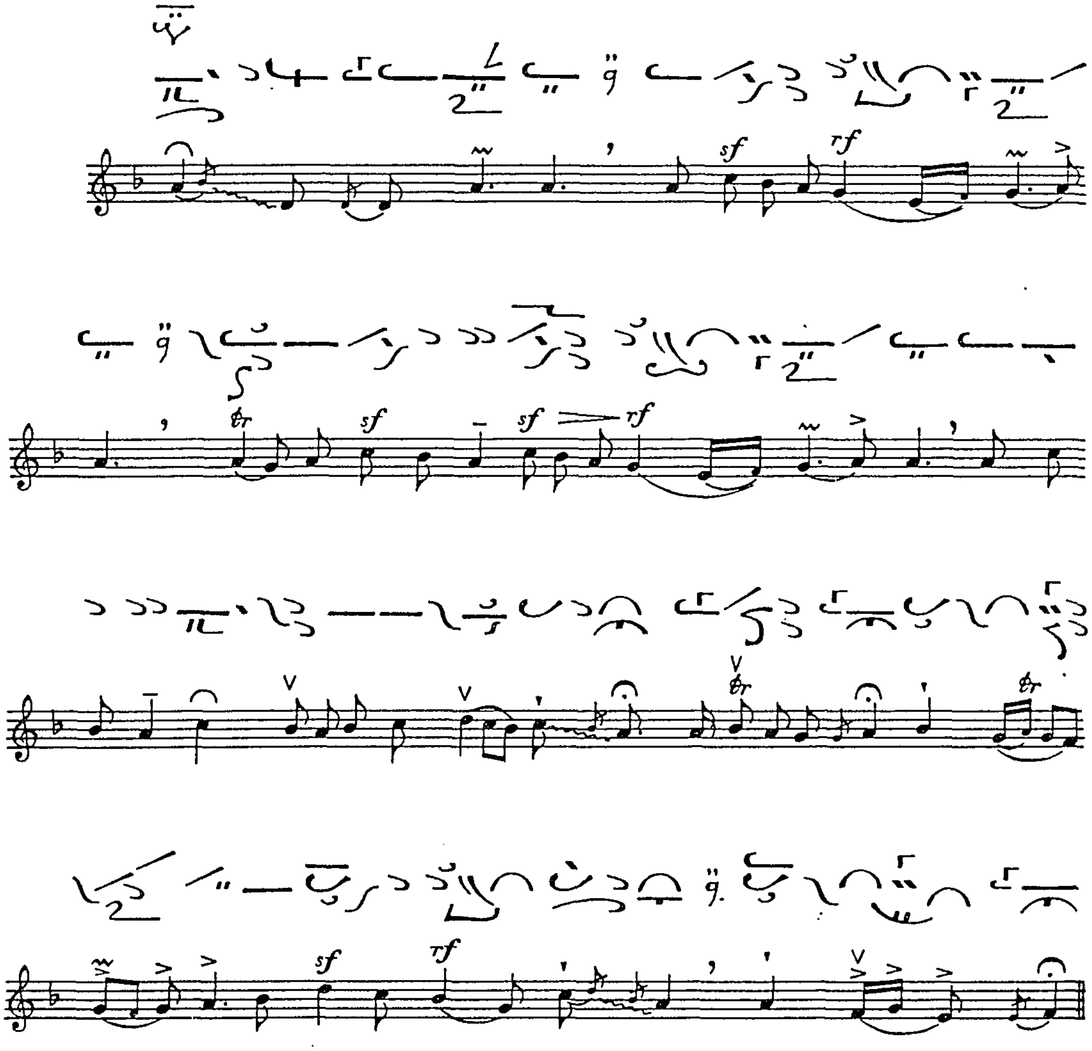
[140] Manuscript No. 156v. Anton Toma privat colection of Byzantine manuscripts, Bucharest, Romania.


rf
sf
sf
rf
sf

Example 4-28[141] is a Sticheraric chant from the eighteenth century in Koukouzelean notation. The fundamental is Ga and the dominant is Ke.

Example 4-28



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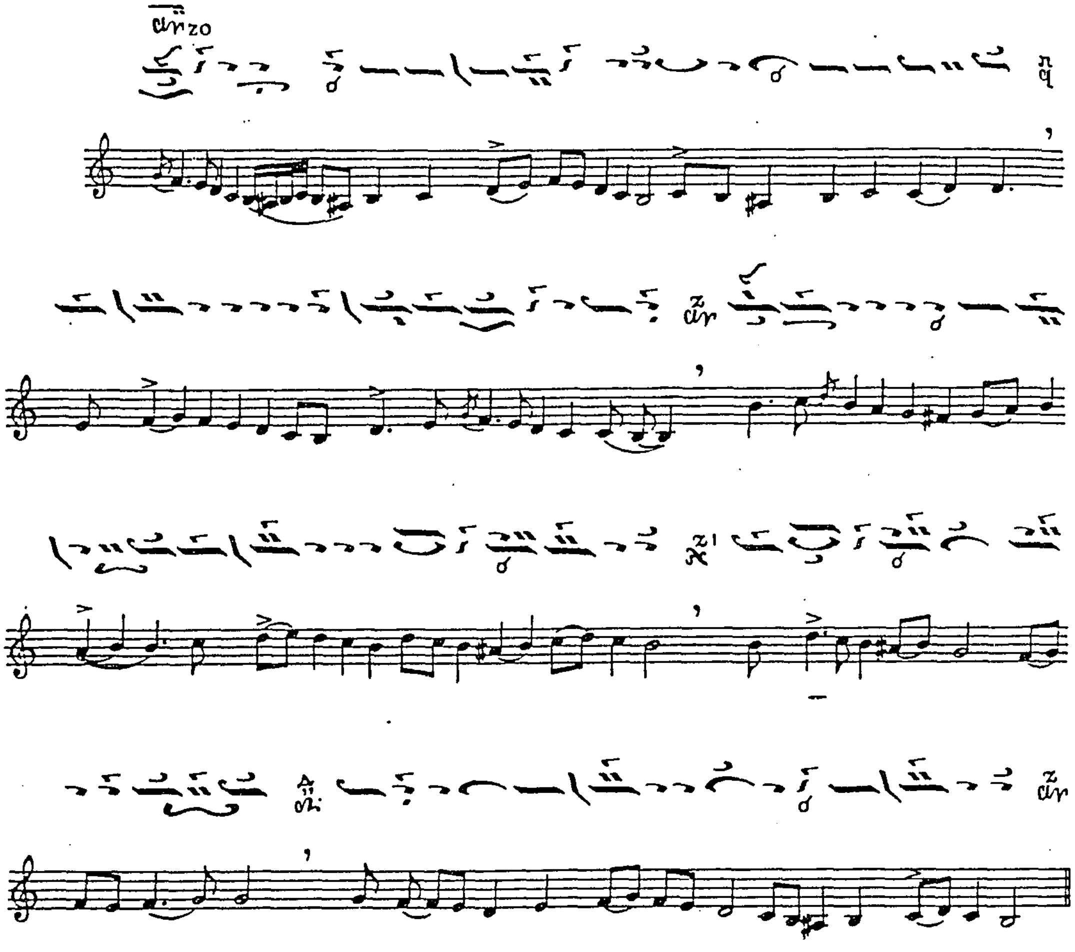
[141] Grogore Pantiru, *Notatia si ehurile muzicii bizantine*, (Bicharest: Editura muzicala a uniunii compozitorilor, 1971), 122.

Example 4-29[142] is a Neo-Byzantine Sticheraric chant in the chromatic variant of mode 7.

Example 4-29



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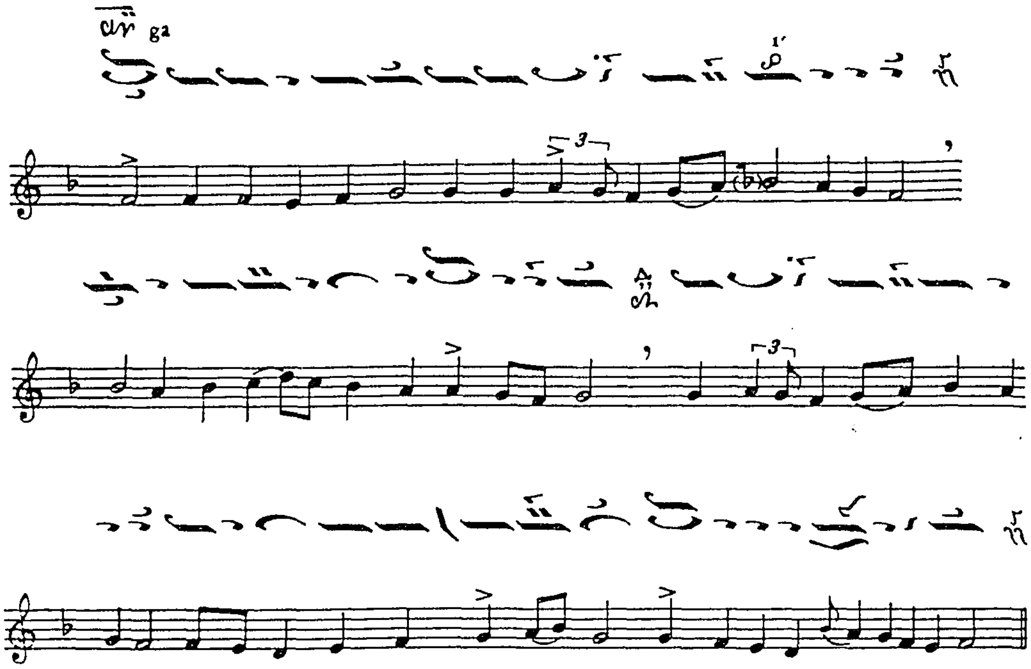
[142] Priest T. V. Stupcanu. *Anastasimatar*, (Bucharest: Tipografia cartilor bisericesti, 1926), 202.

Example 4-30[143] is a Neo-Byzantine Hirmologic chant in enharmonic mode 7 (variant 1) with the fundamental on Ga. Imperfect cadences occur on Di.

Example 4-30



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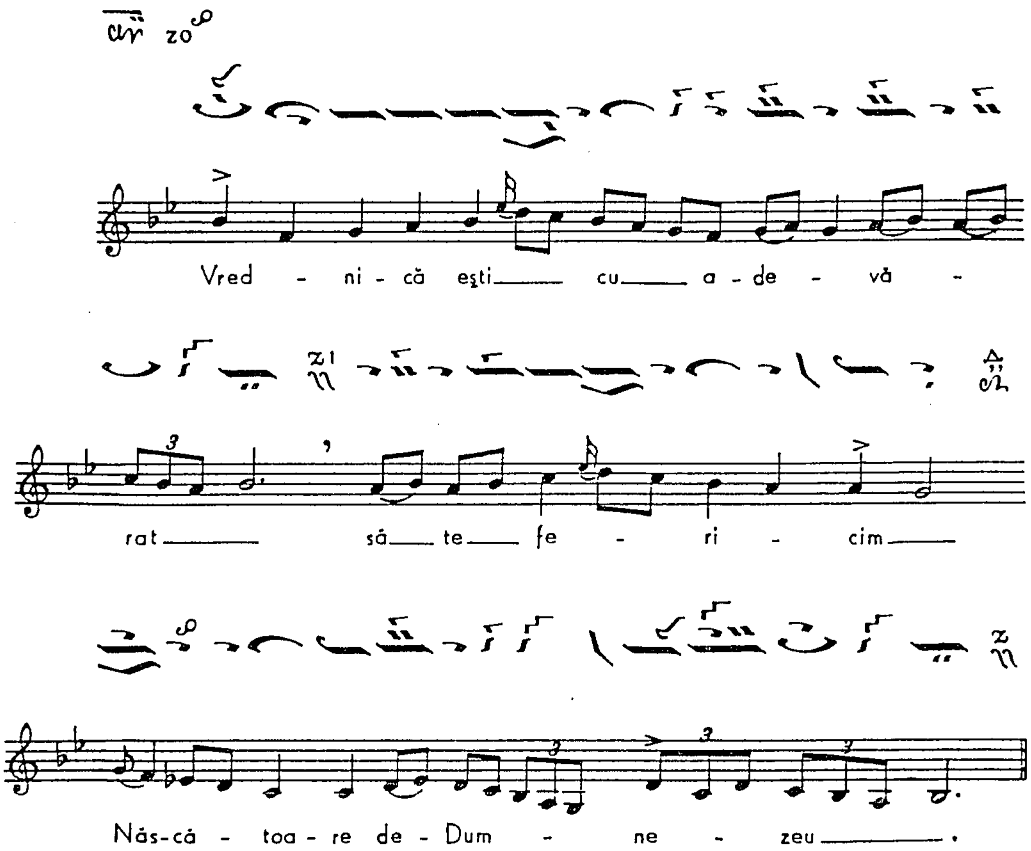
[143] Ibid., 223.

Example 4-31[144] is a Neo-Byzantine Sticheraric chant from the nineteenth century attributed to the Byzantine reformer Hurmuz Hartophylax. This chant is in enharmonic mode 7 (variant 2) with the fundamental on B and the dominant on Di.

Example 4-31


zo
Vred - ni - că ești cu a - de - vă -
rat să te fe - ri - cim
Năs-că - toa - re de - Dum - ne - zeu .

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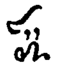
[144] Agathanghelos Kiriazidis, *E dio melisse musiki eclesiastiki*, (Constantinipol, 1906), 321.

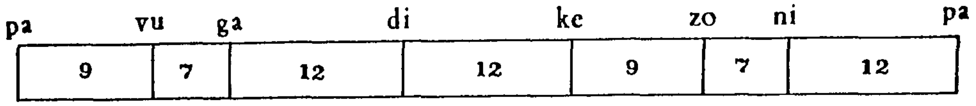
Mode 4 (*Tetardos*)

Mode 4 belongs to the diatonic genus. The following Great Martyria Neume semiographicaly identifies this mode. 

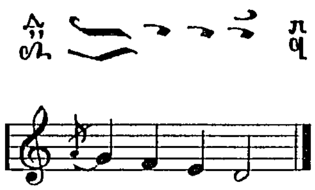
Next to the Great Neume the modal fundamental pitch is placed. This pitch could be Pa, Vu or Di because chants in each of the melodic idioms (Sticheraric, Hirmologic, and Papadike) use different diatonic modal scales with different primary function pitches. All scales of mode 4 are based on the diapason system. For a clear presentation, the variant scales of mode 4 will be studied separately.

Sticheraric Mode 4

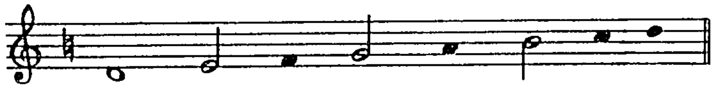
Chants in Sticheraric mode 4 use a diatonic scale with the fundamental on Pa, which is identical with the scale of mode 1.



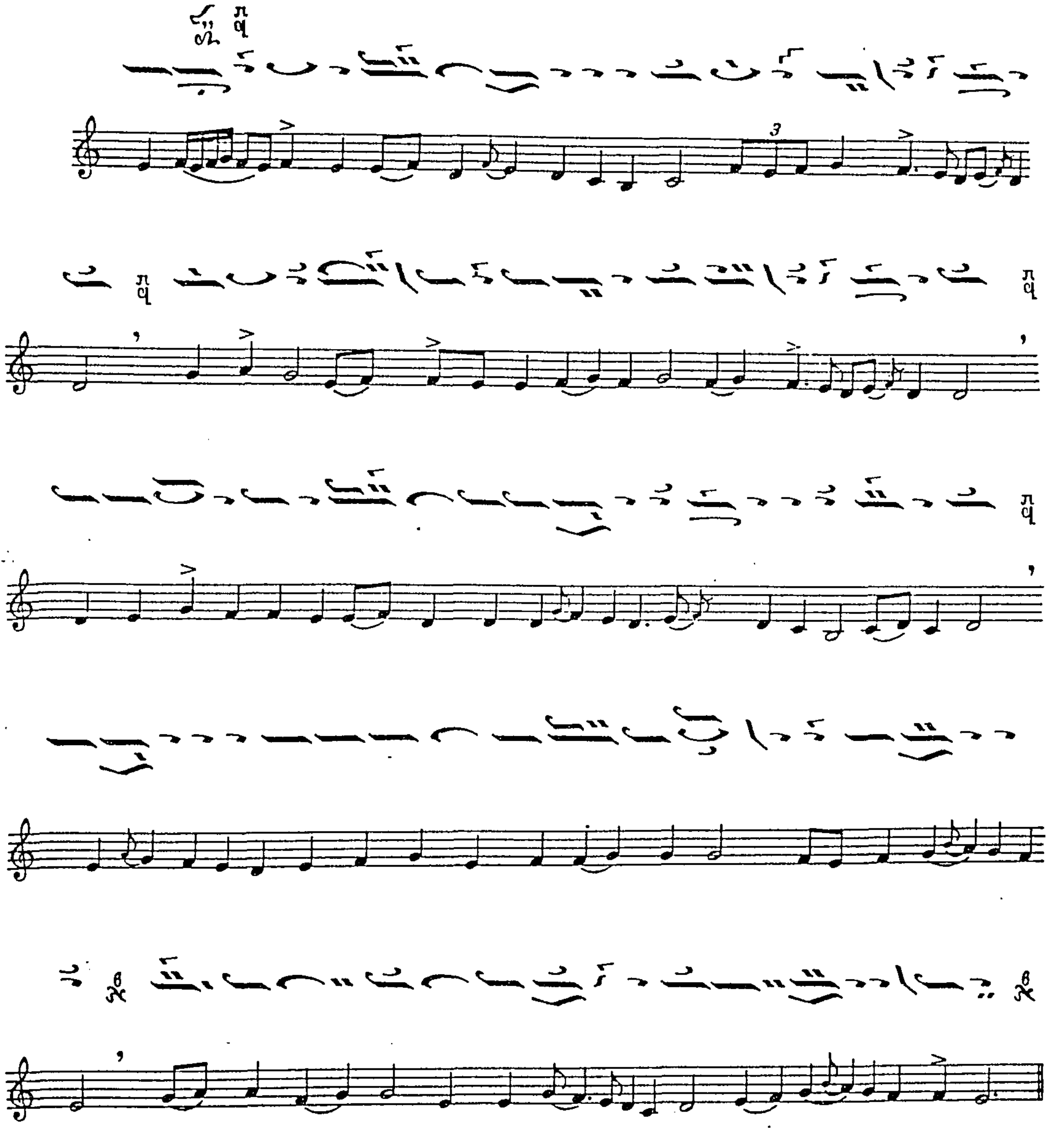
However, essential differences occur in the area of cadences and melodic formulae, caused by the different functions of scale degrees. In mode 1 the modal dominants are Ga and Di while in Sticheraric mode 4 the dominant is Di and important cadential pitches are Vu and Zo. The Great Martyria of mode 4 followed by the Martyria representing fundamental pitch Pa identifies the Sticheraric idiom. The following melodic passage constitutes the traditional intonation formula for Sticheraric mode 4.



Particular to Sticheraric mode 4 is the fact that although perfect cadences occur on fundamental Pa, the final cadence is always on the cadential pitch Vu. The approach to the final note is always made in descending stepwise motion in order to avoid an implied subtone-fundamental relationship between Pa and Vu. Imperfect cadences may occur on Vu, Di, and Zo.



Example 4-32[145] is a Sticheraric chant in mode 4 from the Neo-Byzantine Period.



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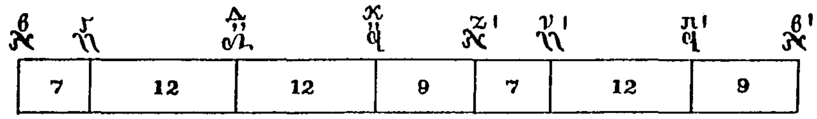
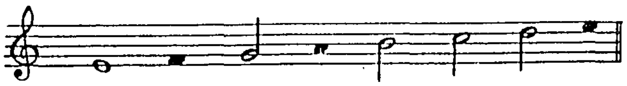
[145] Dumitru Suceveanu, *Idiomelar*, (Iasi, 1848), 47.

Hirmologic Mode 4

Hirmologic chants in mode 4 use a diatonic scale with the fundamental on Vu.

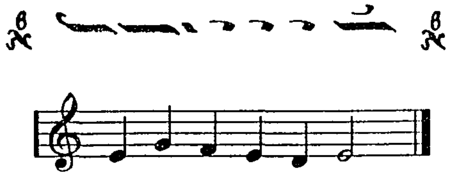


Perfect cadences and final cadence occur on Vu and imperfect cadences may occur on Pa, Di, Zo, and Ni.



In the Byzantine tradition this scale is called *leghetos*.[146] The modal signature represented by the Great Martyria of mode 4 followed by the Martyria of fundamental pitch Vu. In some manuscripts, the modal signature at the beginning of chants using this scale is simply the Greek letters λγτοζ which represents the abbreviation of the word *leghetos*.

The following melodic line is the traditional intonation formula for mode 4 *leghetos*.



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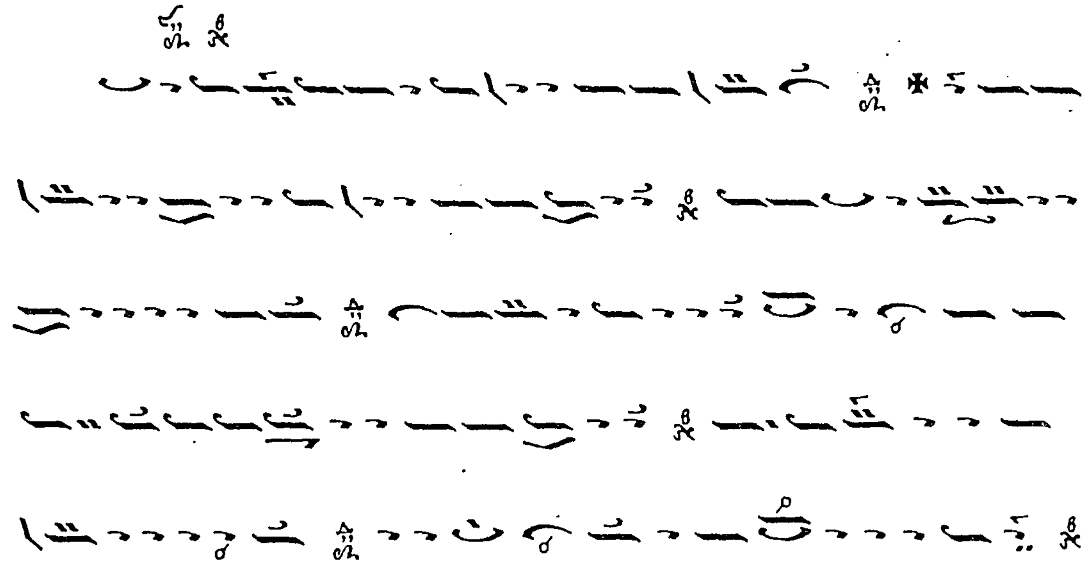
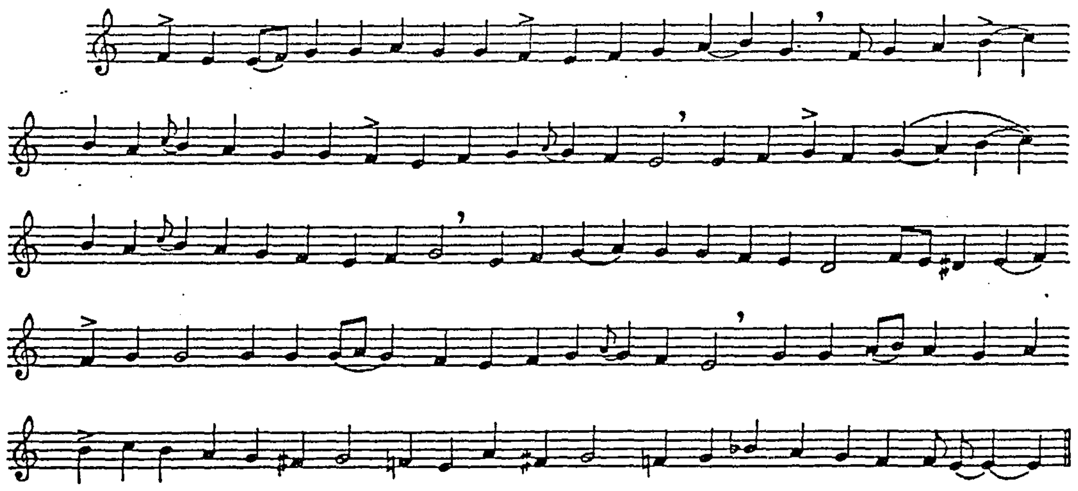
[146] In Greek = tell, recite, sing

Example 4-33[147] is a Neo-Byzantine Hirmologic chant in mode 4 using the scale *leghetos*.





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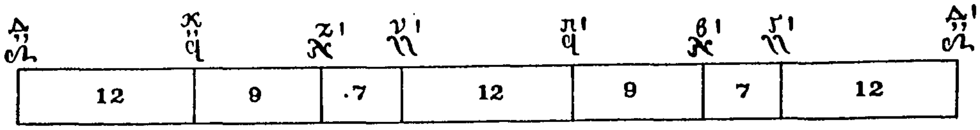
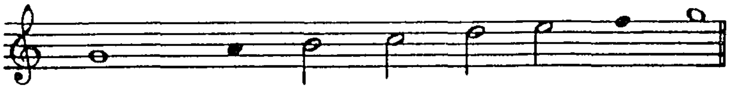
[147] Priest T. V. Stupcanu, *Anastasimatar*, (Bucharest: Tipografia cartilor bisericesti, 1926), 77.

Papadike Mode 4

The modal signature of Papadike mode 4 is the Great Martyria of mode 4 followed by the Martyria of fundamental pitch Di.



A particularity of Papadike mode 4 is that the melodic attraction is polarized around one pitch only, the fundamental Di. During long melismatic passages of Papadike chants, it is often necessary for the performer to pause for a required breath even in the middle of a single word. These pseudo-cadences, are semiographicaly notated with the same signs (Martyria Neumes) as the real cadences and may occur on any pitch of the scale (Vu, Ni, Zo, and Pa) except on Ga and Ke which are regarded as unstable pitches.



The strong and unchallenged melodic attraction often brings these two pitches (Ga and Ke) closer to fundamental Di by chromatic alteration. All perfect cadences, the final cadence, and real imperfect cadences, which take place only at the end of words of text,[148] occur on fundamental Di.

Example 4-34[149], which is an excerpt from a Neo-Byzantine chant attributed to Petrus Lampadariu, illustrates the use of the pseudo-imperfect cadences described above. The Romanian word which constitutes the text for this excerpt is "Paharul" meaning "the cup."[150] The first syllable, "Pa - " is sung at the very beginning of the chant, and followed immediately by "ha - " which is stretched over a very long melisma. At the beginning of the third line the Martyria Neume of Vu requires the performer to stop for a breath even though the word is still not completed. Then the vowel "a" is restated and sung until the end of the third line where the word comes to a completion by the singing of its last syllable " - rul." At this point there is a true imperfect cadence on fundamental Di.

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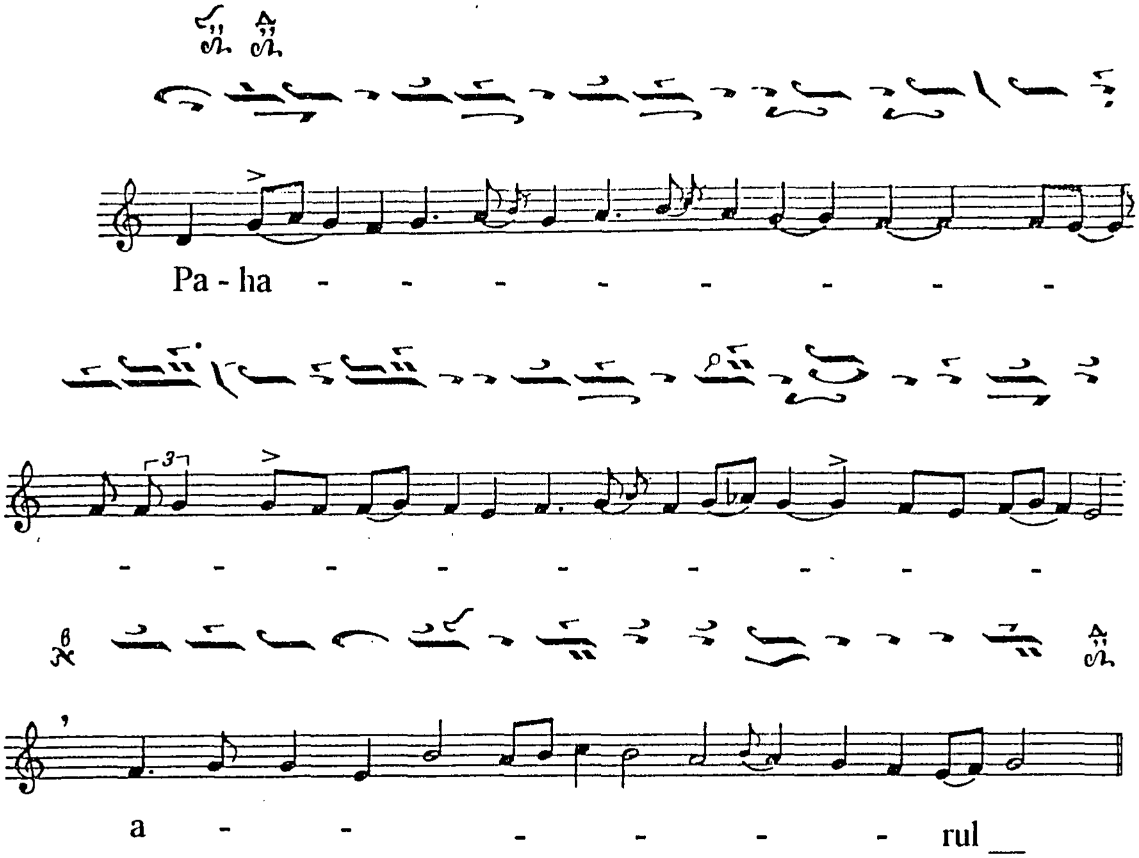
[148] The relation between text and cadences was discussed in Chapter 2.

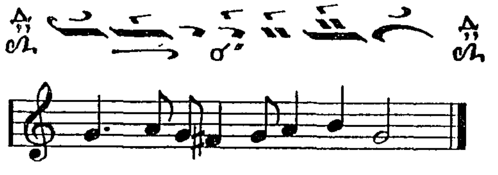
[149] Kiriazidis Agathanghelos. *E dio melisse musiki eklesiastiki*, (Constantinopol. 1906). 603.

[150] The entire text of this chant is "The cup of redemption" and refers to the simbols of the Holy Communion.

Example 4-34

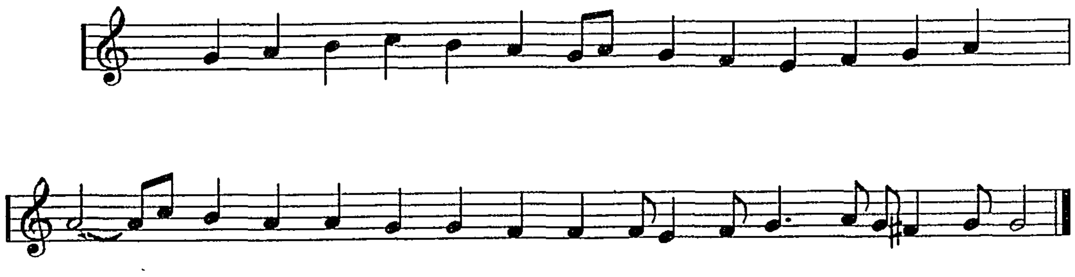


The melodic polarization around a single pitch is well reflected in the intonation formula of Papadike mode 4 where four out of eight notes may be the fundamental pitch. The other notes function as neighbor tones and escape tone ornamentations of the fundamental pitch.



The raised Ga (F♯) in the intonation formula also emphasize the strong and unique primary function of the fundamental Di by avoiding the subtone-fundamental relationship. However, the raised Ga appears in most chants only at the final cadence when the final note is ornamented by its lower neighbor tone.

Example 4-35[151] which illustrates the above statement, is the final formula from a Neo-Byzantine chant in Papadike mode 4 attributed to Daniel Protopsalt.



During the Paleo-Byzantine and Medio-Byzantine periods, mode 4 was basically identical in structure with the Mixolydian mode of Ambrosian and Gregorian chants.

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[151] Theodoru Fokeos, *Tamion Antologhias*, (Constantinopol: Bibliopolion Gheorghiu Scïtanidu. 1868). 379.

In the performance practice of these stylistic periods, the chants in mode 4 were always transposed a fifth down for a more comfortable voice register. This scale had its fundamental on Ni (C) and the dominant on Di (G). A transposition in western notation uses B♭ in the key signature. This practice was basically maintained throughout the rest of the Medio-Byzantine period. However, in the second half of the Medio-Byzantine period, because of the orientation of Byzantine music toward professional soloistic performance the original intonation of modal scale with fundamental on Di (one octave below the theoretical modal scale) was used when the performer was a Bass or Baritone. The following two examples are two variants of the same chant. The first one, in Hagipolite notation, dates from the end of the thirteenth century. The transcription in western notation was done by Grigore Pantiru[152] using the scale of mode 4 transposed down a fifth. The second one is in Koukouzelean notation and dates from the eighteenth century. The transcription presented below, also done by Grigore Pantiru[153], uses the modal scale with the fundamental on Di.

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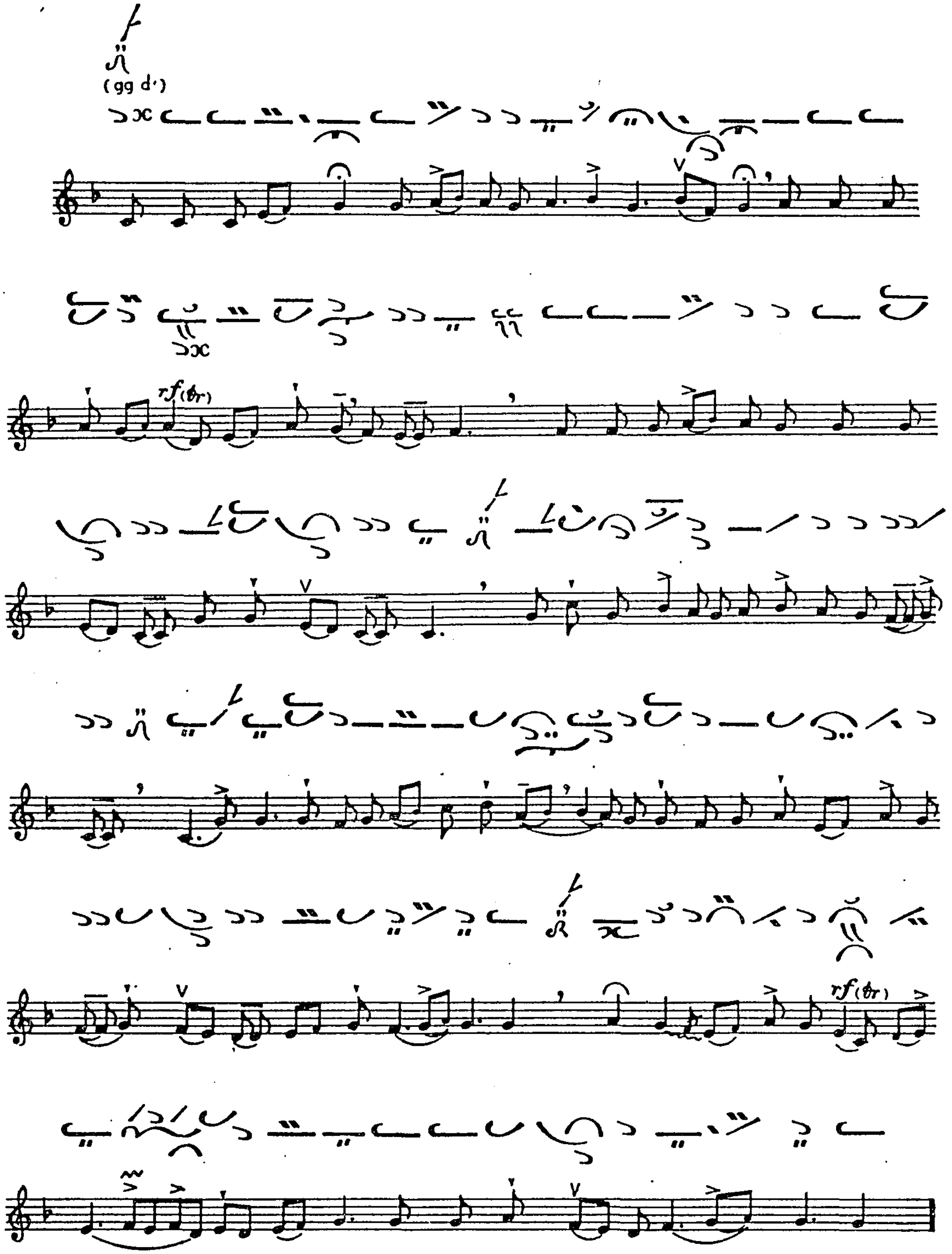
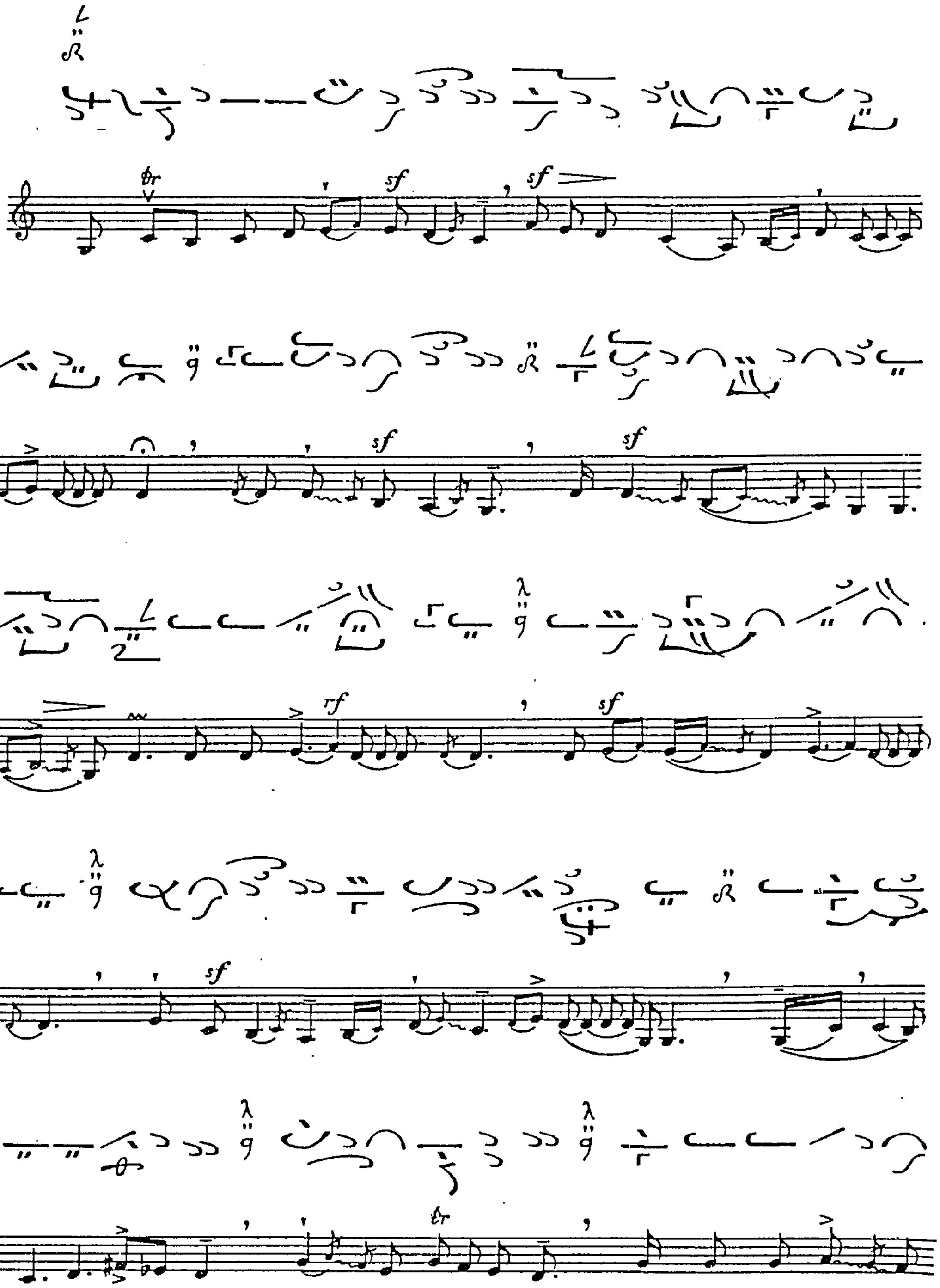
[152] Grigore Pantiru, *Ehurile si notation muzicii bizantine*, (Bucharest: Editura musicala a compozitorilor, 1971), 51. after Manuscript No. 953, folio 88v in the Library of Romanian State Academy.

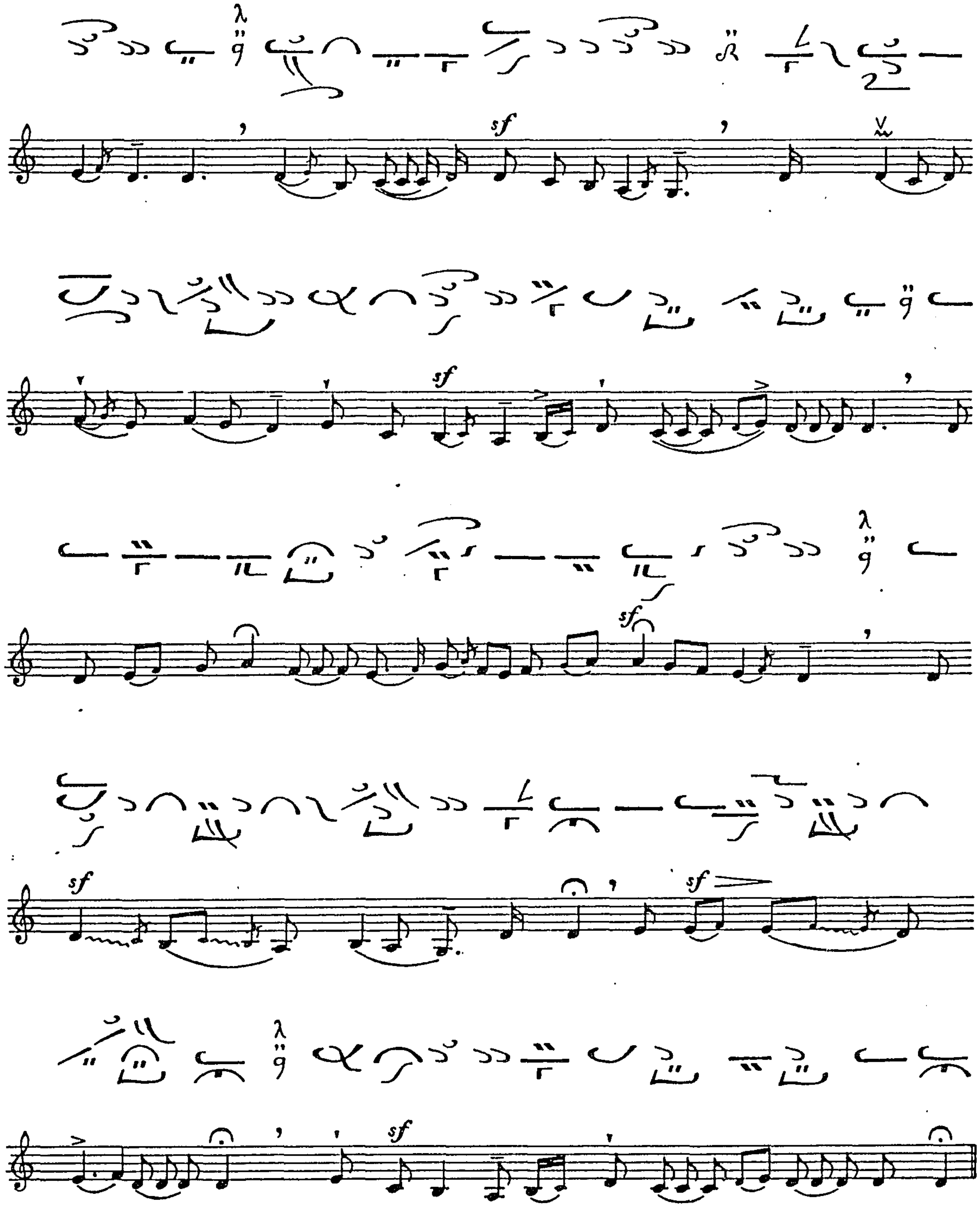
[153] Ibid., 105 after Manuscript in folio 146r in Anton Toma privat colection of Byzantine Manuscripts.

Example 4-36



Example 4-37




sf
sf
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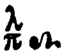
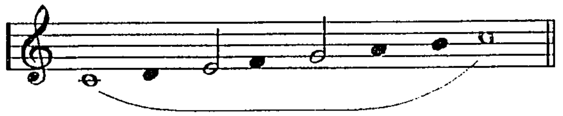
Mode 8 (*Plagios tetardos*)

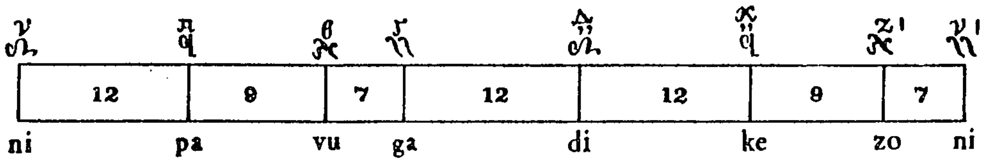
Mode 8 belongs to the diatonic genus. The modal signature is similar to the signature of mode 4 (without the *Hypsile* and preceded by the Greek abbreviation of the word *plagios*).  To the right of the Great Martyria Neume is the Martyria for Ni or Ga, representing the two scales of mode 8.

Modal Scales, Intonation Formulae, and Functions of Scale degrees

The first scale with the fundamental on Ni is based on the diapason system.

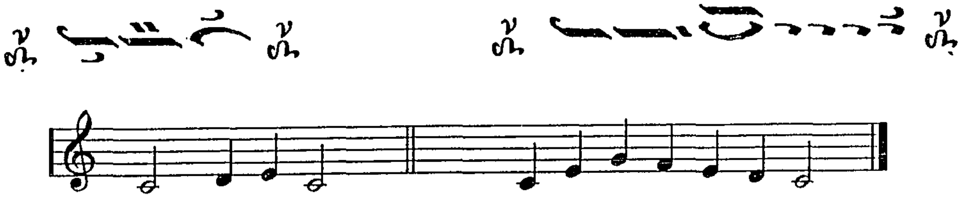


In a transcription of Byzantine chant into western equal temperament tuning, the modal scale is based on fundamental pitch C. The modal signature is that having no sharps or flats.

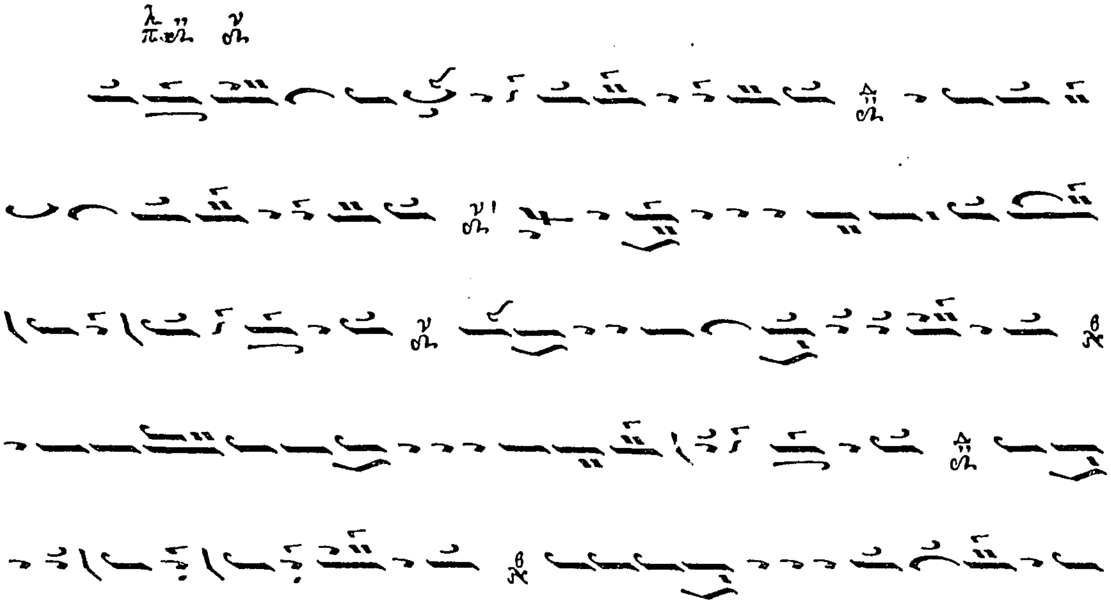


The fundamental pitch is Ni and the dominant is Di. Perfect and final cadences occur on Ni and imperfect cadences occur on Di and Vu.

There are two intonation formulae practiced by Byzantine performers.



Example 4-37[154] is a Sticheraric chant in mode 8 with fundamental on Ni.



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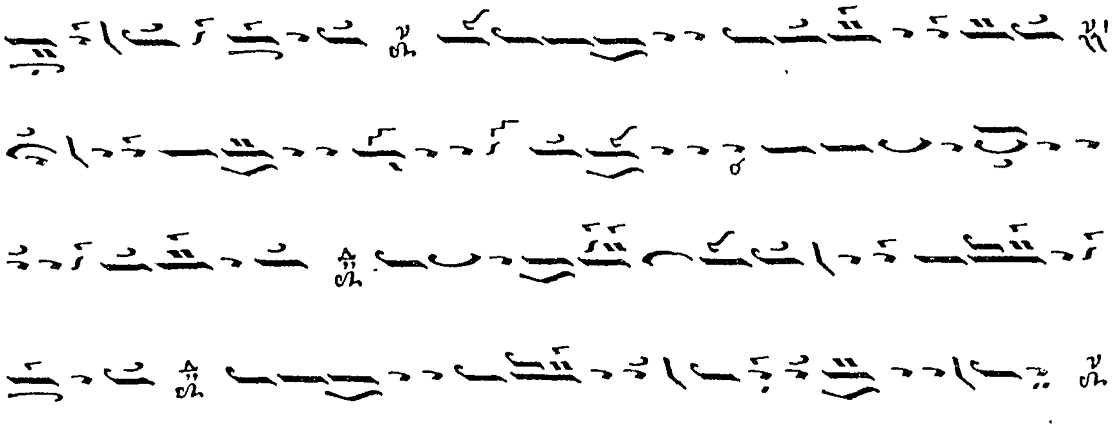
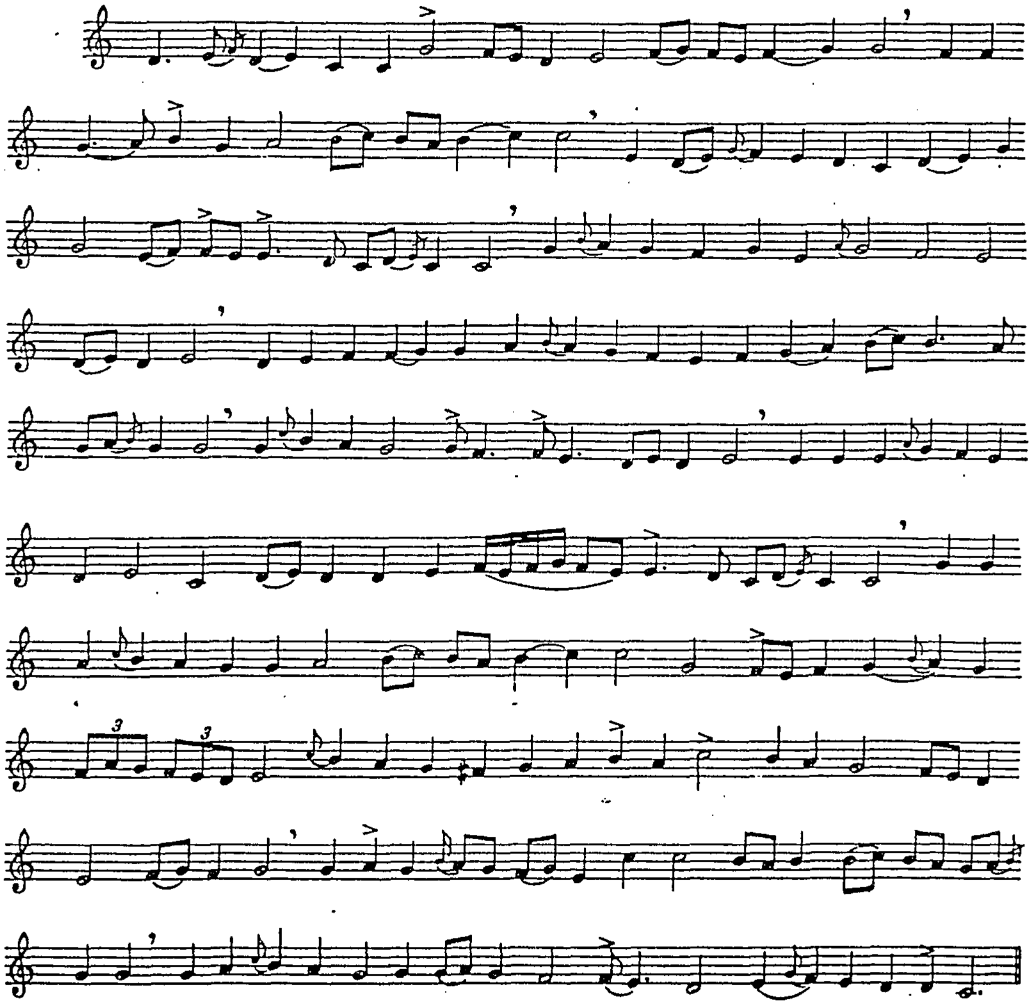
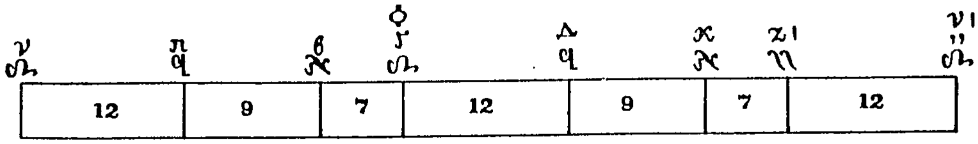
[154] Dumitru Suceveanu, *Idiomelar*, (Iasi, 1848), 156

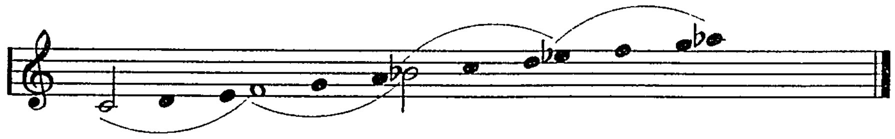




The second scale with the fundamental on Ga (F) has Zo lowered (B♭). Apparently this scale is only a transposition of the first scale with the fundamental on Ni. However, an essential difference consists in the system of scale formation. The first scale is based on the diapason system, while the second is based on the triphonic system as illustrated below.

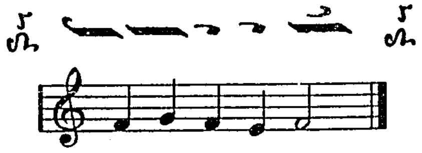


According to the system of the "Wheel" the intervalic structure comprised from a large tone, a small tone, and a smallest tone starts on Ni(C) and is repeated on Ga(F), on Zo'(B♭) and Vu'(E♭).



A transcriptions in western notation use B♭ in the key signature.

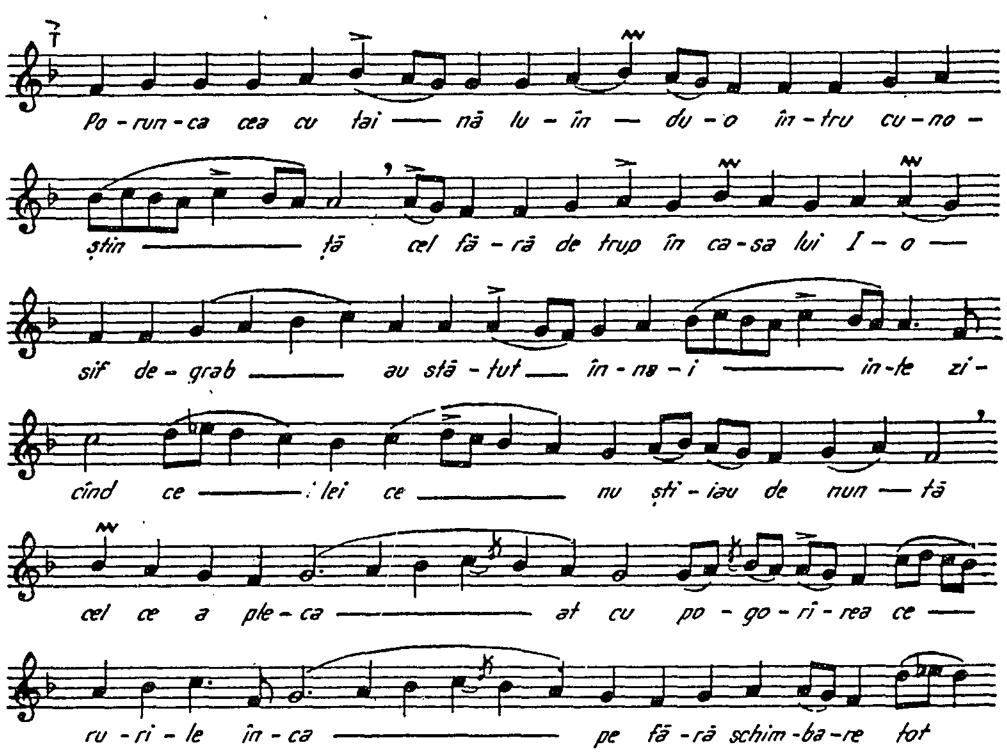
The following melodic line is the intonation formula used for chants in mode 8 with the fundamental on Ga.



Perfect and final cadences occur on the fundamental Ga. Imperfect cadences occur on the dominants Ni and Zo and on cadential pitch Di.

Example 4-38[155] is a Sticheraric chant attributed to Macarie Hyermonarch, a Romanian composer and performer of Byzantine chants who lived in the first half of the nineteenth century.

Example 4-38


Po - run - ca cea cu tai — nă lu - în — du - o în - tru cu - no -
ştin — tă cel fă - ră de trup în ca - sa lui I - o —
sif de - grab — au stă - tut — în - na - i — în - te zi -
cînd ce — : lei ce — nu şti - iau de nun — tă
cel ce a ple - ca — at cu po - go - rî - rea ce —
ru - ri - le în - ca — pe fă - ră schim - ba - re tot

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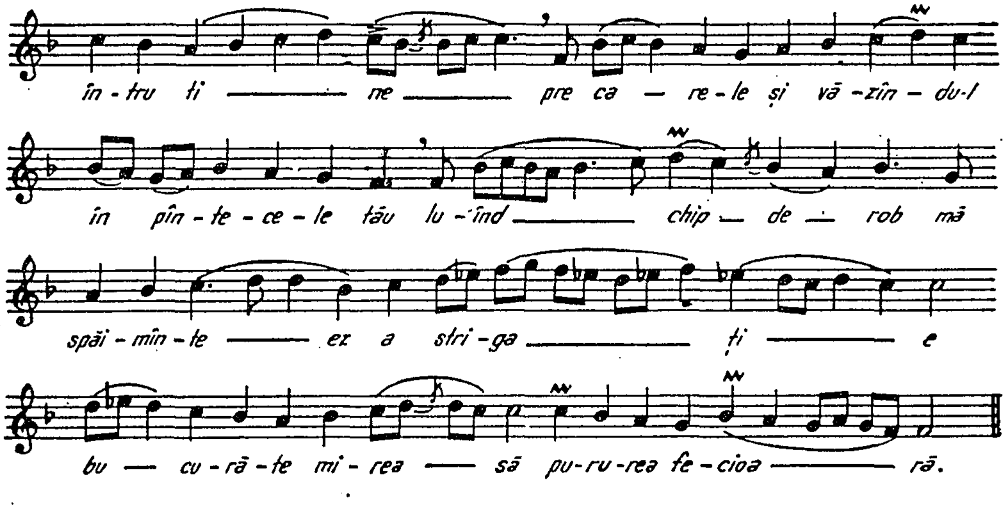
[155] I. Popescu-Pasarca, *Cintarile triodului pe muzica bisericeasca orientala,* (Bucharest: Tipografia cartilor bisericesti, 1923), 47.


în - tru ți — ne — pre ca — re - le și vă - zîn - du - l
în pîn - te - ce - le tău lu - înd — chip — de — rob mă
spăi - mîn - te — ez a stri - ga — ți — e
bu — cu - ră - te mi - rea — să pu - ru - rea fe - cioa — ră.

The *Ison*

The *Ison* is one unique form of Byzantine "harmony." It consists of a continuous pedal on assigned pitches specific in each mode. The *Ison* is sung very softly with open mouth on vowel "a" as a background to the actual chant. It is believed that the practice of the *Ison* began in the Paleo-Byzantine Period. As explained in Chapter 1, it was designed as an aid to the masses of worshipers and also to the soloists during antiphonal singing. The *Ison* has an improvisatory character and there has been no notational design assigned to it in any of the Byzantine notational systems, thus there are no written manuscripts to prove its existence in the Paleo and Medio-Byzantine periods. However, its use is exemplified by a very strong oral tradition carried forward over the centuries by Byzantine performers.

In the Neo-Byzantine period the *Ison* is not used any more during antiphonal singing of the Hirmologic antiphonal chants but has developed into a new and original form of musical expression during chants of the Sticheraric and Papadike idioms. Although there is still no notational procedure, a direct observation of the *Ison* in the existing Byzantine music allows one to reach several theoretical conclusions.

1. The *Ison* is used only in chants with slow tempos, namely the Sticheraric and Papadike chants.

2. The pitch of the *Ison* is the modal fundamental, the modal dominant, or both in a double *Ison*. The choice of the fundamental or the dominant and their eventual alternation during the unfolding of the chant is made according to which of the pitches is the center of melodic attraction. The simultaneous sounding of the fundamental and the dominant in what is called a double *Ison* is possible only when the interval between these two pitches is a perfect forth or fifth. For instance, in Mode 1 the fundamental is Pa (D) and the dominant is Ga (F), therefore a double *Ison* is not possible.

3. The sound of the *Ison* must be at a considerably low dynamic (***ppp***) in order to avoid strong clashes with the sounds of the actual chant.

4. The interval between the *Ison* and the first pitch of the actual chant must be the interval of the *Ison* (unison). The interval between the *Ison* and the actual chant at the end of the first melodic formula, and at the beginning and the end of all consequent formulae must be from the *Homophonos* or

Symphonos categories (unison, octave, fourth, fifth). There are a two exceptions. 1) The beginning of the actual chant can present the subtone while the *Ison* is on the fundamental pitch. In this case the *Ison* must precede the beginning of the actual chant.

2) The interval between the *Ison* and the pitch of the actual chant at the end of a melodic formula can be an interval from the *Emmelis* category (large tone, small tone, smallest tone, major and minor thirds) when the next melodic formula modulates. In this case the *Ison* and the actual chant will move to the same pitch which must always be the fundamental of the new mode.

The *Ison* is used only when the melody of the chant unfolds above the modal fundamental (except the occasional use of the subtone). If the melody of the chant descend below the fundamental beyond the subtone, then the singer performing the *Ison* is to join the actual chant in unison until the melody reaches again the fundamental and ascends above it. The same practice where the performer singing the *Ison* is joining the actual chant in unison, may take place at the point of the final cadence, thus providing a more conclusive end to the chant.

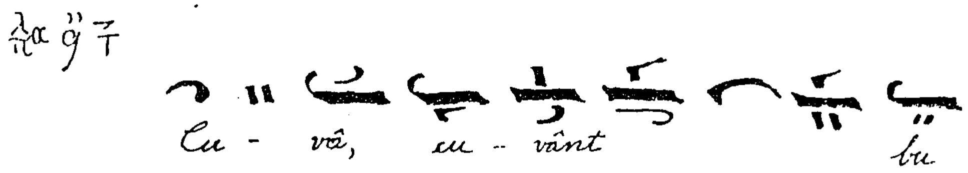
Example 4-39[156] is a choral work composed in 1989, in Byzantine style and using western notation by Mircea Diaconescu, a contemporary Romanian composer living in Germany. The melody in the solo part is accompanied by the mixed chorus in a multiple *Ison* technique.

Example 4-39

2. CUVÂNT BUN

(A GOOD WORD)

For Solo and Mixed Chorus a capella



1.Title..............: Cuvânt bun
2.Name of the chant..: poly-eleos
3.Divine Office......: The Feasts of the Mother of God
4.Text...............: Anonymous
5.Melody Author....: Gheorghe Căciulă (19th Centuury)
Tone......: echos 1 plagal
Style.....: papadic
6.Source.............: Manuscript "Toma Diaconescu"f.79rv,Pietroşiţa *
7.Transcription......: Gh.Ciobanu*
8.Record.............: "Rumänisch-byzantinische Gesänge" (4'10") TonWest Nr108104('82
9.Bibliography.......: * Gh.Ciobanu : Izvoare ale muzicii româneşti vol.2,Ed. Muz., Bucureşti,1978

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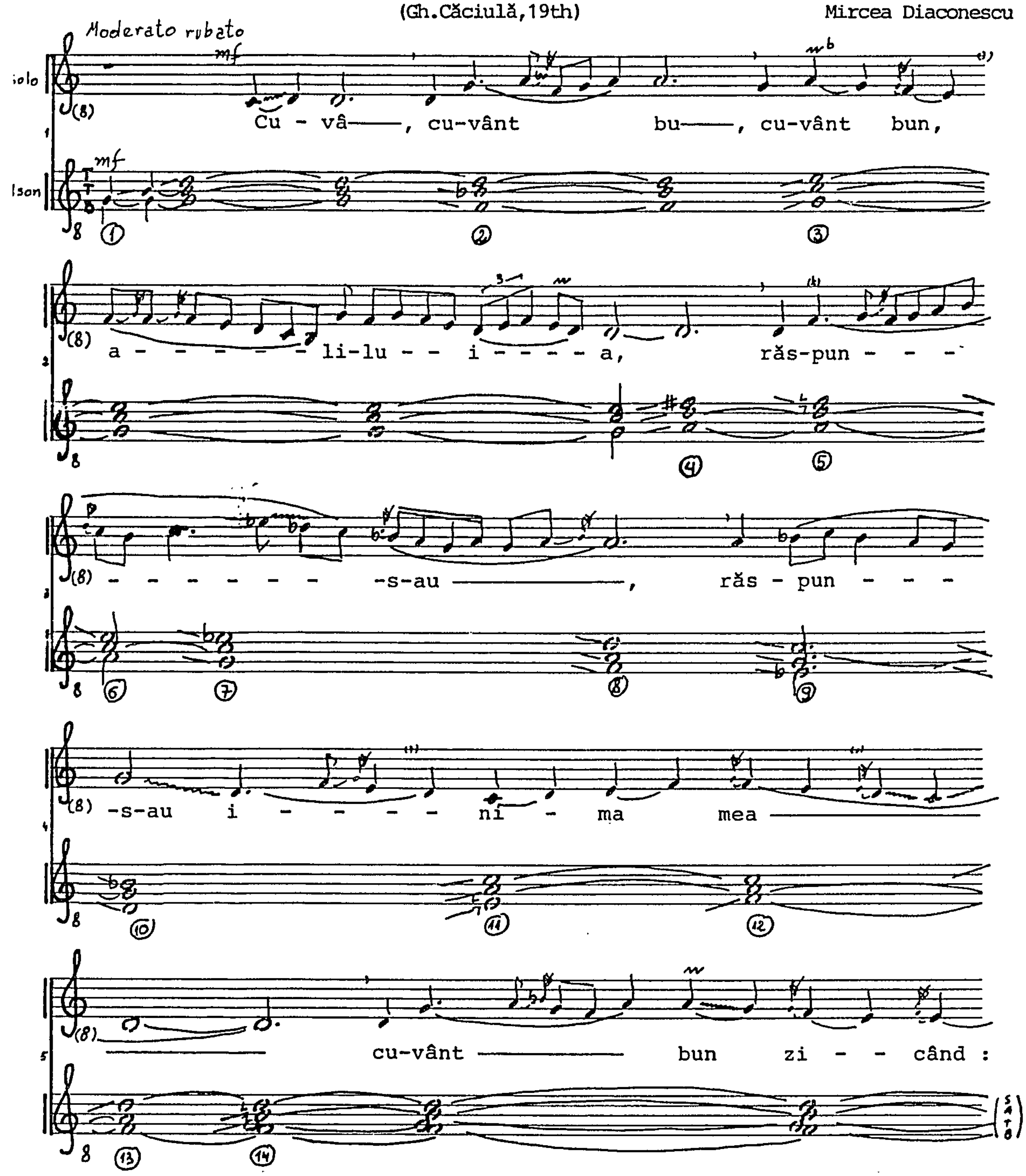
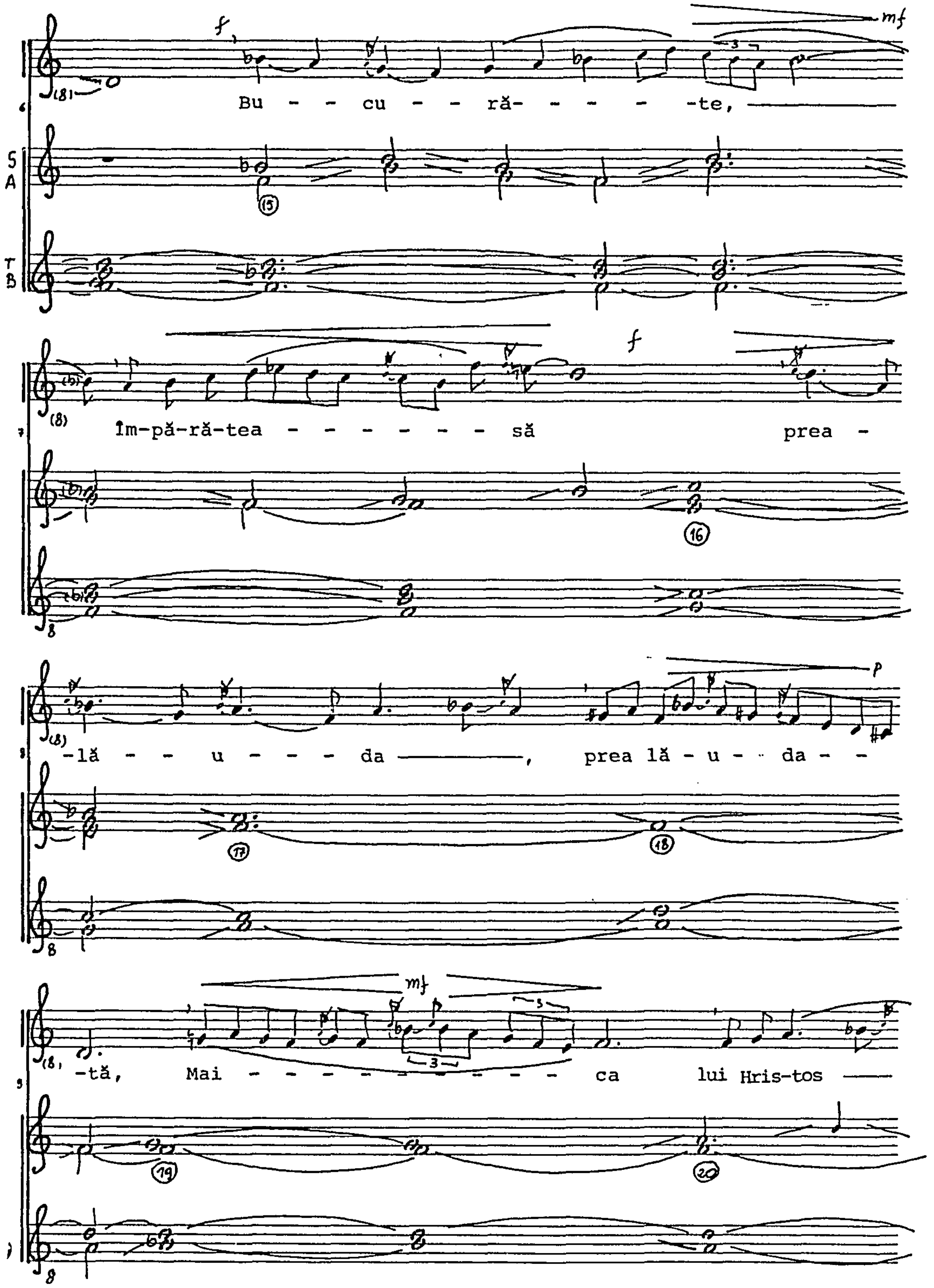
[156] The composer's autograph manuscript is reproduced with the permision of the composer.

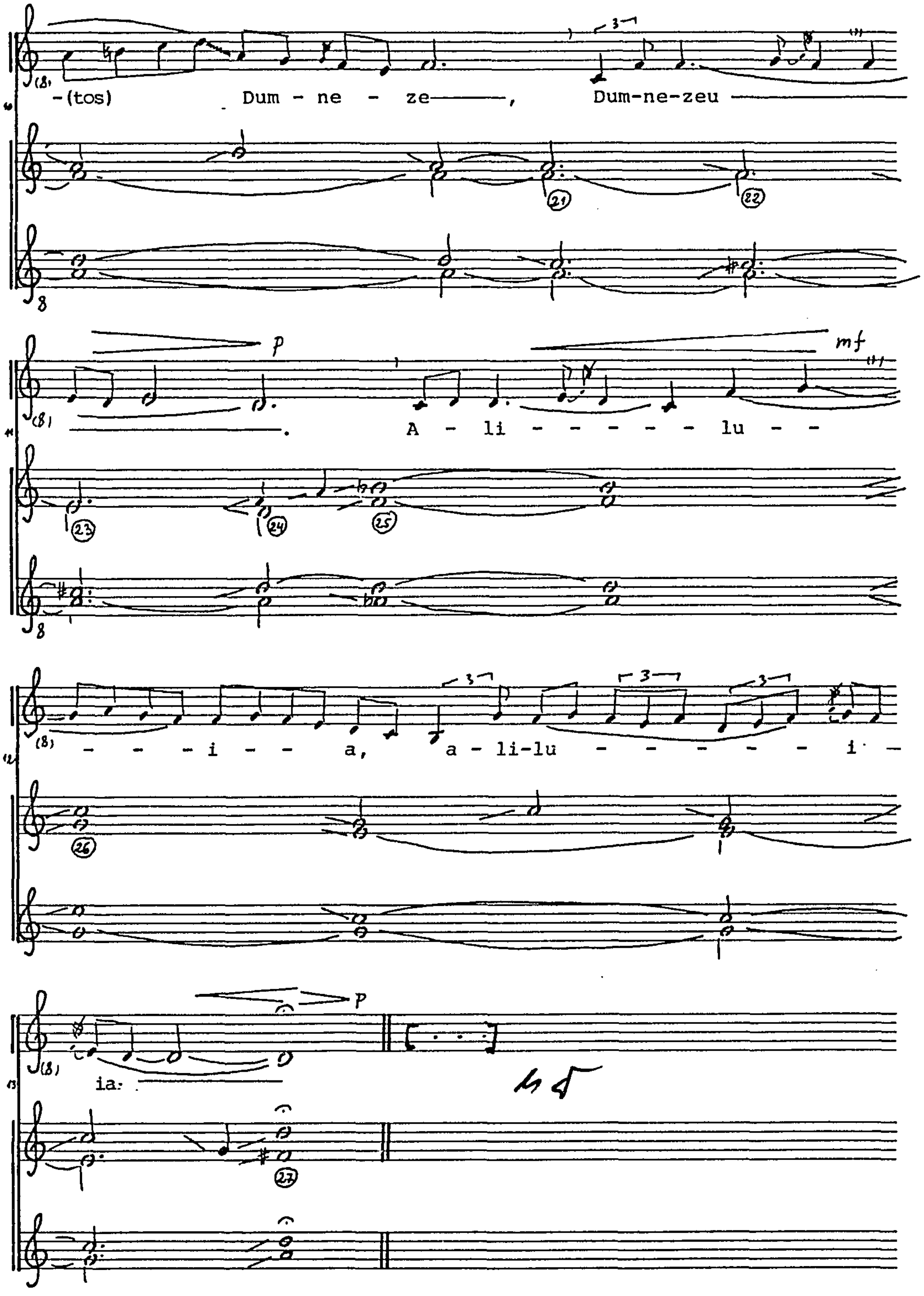
2. CUVÂNT BUN

(Gh.Căciulă,19th)

Mircea Diaconescu


Moderato rubato
Solo
Ison
mf
Cu - vâ——, cu-vânt bu——, cu-vânt bun,
a - - - - - - li-lu - - i - - - - a, răs-pun - - -
- - - - - - - -s-au ——————, răs - pun - - -
-s-au i - - - - - ni - ma mea ——————
—————— cu-vânt —————— bun zi - - când :
S A T B
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭

f
mf
Bu - - cu - - ră- - - - - -te,
S
A
T
B
15
Îm-pă-ră-tea - - - - - - - să prea -
16
-lă - - u - - - da ————, prea lă - u - - da - -
p
17
18
-tă, Mai - - - - - - - - - - ca lui Hris-tos
19
20


-(tos) Dum - ne - ze——, Dum-ne-zeu
A - li - - - - - lu - -
- - - i - - a, a - li-lu - - - - - - i -
ia:
p
mf
p
3
(21)
(22)
(23)
(24)
(25)
(26)
(27)
(8)
8

Conclusions

In the field of music theory, my hope is that the present study will contribute information in two major areas which have been neglected in other studies on Byzantine music. The lack of information available in these two areas is clearly stated by the authors of the article about Byzantine music in *Grove's Dictionary of music and musicians*.[157]

> Byzantine music theory is less abundant and less concerned with specific cases than the theory of western chant. One conservative line of Byzantine theory simply continues late classical speculation and is minimally focused on contemporary practice.

The present work attempts to provide a systematic theory of Byzantine music which focuses on the contemporary practice of the Neo-Byzantine period.

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[157] *Grove's Dictionary of music and musicians*, Ed. Stanley Sadie. New York: MacMillan Press, 1989 562.

In Chapter 4, referring to the loss of authentic intonation in the chants of the enharmonic modes, several reasons were mentioned for the continuous and rapid disappearance of Byzantine chant in the very countries that have preserved it for centuries. Under such conditions, the final result would appear to be, at the least, the transformation of this musical tradition into a new form, or in the most extreme case its complete disappearance as a living tradition. With this in mind, I felt compelled to make a record of the concepts on which this musical tradition has operated. This, in turn, could be used by future scholars as primary reference material.

It is also my hope that this dissertation will bring a valuable contribution to the concept of modality in theory of melodic construction. These theoretical concepts might offer to the interested composer a new and vast area that may be explored.

Most of all, this dissertation is an attempt to shed some light on a largely undocumented aspect of artistic life that I believe is worthy of a close examination.

In accordance with the discoveries made in this study, it is clear that Byzantine music operates on several highly sophisticated levels of melodic construction. These procedures are the basis for the formation of the eight primary modal scales, and their variants, which in turn constitutes the sound material used for the composition of Byzantine chants. The study of rhythm, melodic formulae and cadences reveal that in Byzantine chant there is an intimate relationship between music and text. This is a heritage related to the ancient Greek concept of "wholeness of art." The very careful selection of the most appropriate modal scales for the setting of various liturgical texts is largely responsible for the notion of *ethos* with its attendant power to move the listener, that is reported in classical antiquity, and later by such music theorists as Boethius and Guido.

In the field of musicology, this dissertation provides the tools to decipher the Neo-Byzantine manuscripts and presents over 80 Byzantine chants in their original notation and also with their transcriptions into western notation.

There are two main areas of research in Byzantine music that could not be covered in this dissertation and require further study.

1. In the very specialized field of research in Byzantine music, a comparative study is needed between the music of the several national schools of Byzantine chant.

2. Considering its universal impact, an analytical study is necessary to reveal the extent of the influence of Byzantine music. For example, Byzantine elements can be traced in the music of several composers, among them, Tchaikovsky, Rachmaninov, Paul Constantinesco, George Enesco, Béla Bartók, Aram Khachaturian, and Alan Hovhanes.

I hope that this dissertation will also stimulate other scholars to similar research.

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